

Reply to the Attention of	Laura Brazil
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Our File No.	211923
Date	November 5, 2014

Ontario Energy Board
P.O. Box 2319
2300 Yonge Street
Suite 2700
Toronto, Ontario M4P 1E4

Attention: Board Secretary

**Re: Greenfield South Power Corporation
Application for CPCN
EB-2014-0299**

Please find enclosed the Expert Report of John Todd dated November 5, 2014, including Form 13A. The Expert Report is submitted further to Procedural Order No. 1 dated October 28, 2014, which included within the List of Issues certain topics that were not addressed in the Applicant's Pre-Filed Evidence.

Yours truly,



Laura Brazil

/kk
Attach.

Copy to: Mike Richmond (McMillan LLP)



34 King Street East, Suite 600
Toronto, Ontario, M5C 2X8
elenchus.ca

Proceeding EB-2014-0299

Application of Greenfield South Power Corporation for a Certificate of Public Convenience and Necessity

**Evidence Prepared by
John Todd, President
Elenchus Research Associates, Inc.**

**On Behalf of Greenfield
South Power Corporation**

5 November 2014

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1 INTRODUCTION

Greenfield South Power Corporation ("Greenfield") has entered into a 20-year Amended and Restated Clean Energy Supply Contract with the Ontario Power Authority ("OPA") to construct and operate a natural gas fired, 300 megawatts net nominal capacity, power plant in St. Clair Township, near Sarnia, Ontario. The power plant is referred to as the Green Electron Power Plant ("GEPP"). Greenfield applied to the Ontario Energy Board ("OEB" or "Board") for a Certificate of Public Convenience and Necessity ("Certificate") on September 18, 2014, with amendments filed on September 25, 2014 related to the construction of a natural gas supply system connected to the Vector Pipeline Limited Partnership ("Vector") pipeline ("GEPP Natural Gas Utilization System"). The proposed GEPP Natural Gas Utilization System will be located entirely on Greenfield's property and will consist of 450 meter long high pressure steel 8 inch diameter pipeline and ancillary facilities.

Greenfield has retained me to assist the Board in this proceeding (EB-2014-0299) by presenting expert opinion evidence on two of the issues identified in the Issues List that appear as Appendix B to Procedural Order No. 1 dated October 28, 2014.

1. *What are the cost/economic factors related to serving the GEP by Greenfield or Union, on both Greenfield and Union's other customers?*

...

5. *Will granting a Certificate to Greenfield in Union's service area adversely impact Union and Union's ratepayers? For example, will there be stranded assets, lower profit, decreased revenues, etc.?*

I have been dealing with regulatory issues for over 35 years and have testified before regulatory agencies across Canada on a wide range of matters related to regulatory principles, policies and procedures as applied to the natural gas sector, as well as electricity and telecommunications. My curriculum vitae are attached as Appendix A.

This evidence is divided into four additional sections. Section 2 summarizes the relevant information that is on the record to date. Section 3 and 4 present my analysis related to these issues. My conclusions are recapped in the final section.

2 BACKGROUND INFORMATION

The analysis of issues 1 and 5 on the issues list is dependent on the terms of the options that are available to Greenfield for supplying natural gas to GEPP. Those options are as follows.

- The **Vector Service Option** which consists of the construction and maintenance by Vector of a tap on the existing Vector Pipeline that runs along the GEPP property line and the construction and maintenance by Greenfield of the GEPP Natural Gas Utilization System to connect the GEPP facility to the Vector tap. My analysis of this option is based on the evidence provided in the material filed by Greenfield in this proceeding.
- The **Union Interruptible Service Option** which consists of the construction by Union of the facilities required to provide T2 Interruptible service to GEPP. My analysis of this option relies primarily on information filed by Union Gas in its leave-to-construct application (EB-2014-0147), supplemented by information filed by Greenfield in the current proceeding.

The analysis that follows is based on a 20 year time horizon in order to be consistent with Greenfield's power purchase agreement ("PPA") with the Ontario Power Authority ("OPA") which is for a term of 20 years. The costs that serve as the basis of my analysis for each of these options are briefly summarized below. In addition, basic information pertaining to Union's T2 Firm service rate is also summarized since my analysis includes some discussion of a "like-for-like" cost comparison of the Vector Option which is firm service to Union T2 Firm service.

2.1 THE GREENFIELD/VECTOR SERVICE OPTION

Details of the Vector Service Option are provided in the Pre-filed Evidence of Greenfield (Amended) which was filed with the Board on September 25, 2014, supplemented by the material filed by Greenfield simultaneously with this report.

Greenfield executed an Interconnection Agreement with Vector Pipeline, which is regulated by the National Energy Board, in January 2014. Under this agreement,

Greenfield will transport natural gas to the GEPP using Vector's Hourly Firm Transportation Service (FT-H) and Operation Variance Service (OVS). The FT-H service is a firm service; hence, unlike the Union Service Option described below, it cannot be curtailed during periods of high natural gas demand.

The forecast costs that will be incurred for this service are:

- Initial capital costs consisting of:
 - The cost for the Vector Tap which is estimated to be \$1,125,000¹ and will be recovered from Greenfield as a capital contribution; and
 - The cost of the GEPP Natural Gas Utilization System from the Vector Tap to the related metering facilities near the power plant which is estimated to be \$500,000 consisting of \$250,000 for the pipe and \$250,000 for the meter²;
- Annual Vector demand and usage charges for the FT-H and OVS services based on Vector's current National Energy Board approved tariffs which are estimated to be \$530,000 annually³;
- The annual operating cost for operations and maintenance related to gas transportation using the Vector services is estimated to be \$10,000⁴; and
- The cost of credit support (Vector requires credit support for 1 year of service fees being \$530,000 as noted above) which Greenfield estimates will cost it \$35,510 annually⁵.

¹ Greenfield Pre-filed Evidence, Appendix 9, page 4, Vector Interconnection Agreement.

² Greenfield Pre-filed Evidence, page 17. It is noted that the evidence filed by Union in EB-2014-0147 states at page 13 of 22, lines 13-14: "Union estimates the total cost of a connection to Vector to be between \$5.2 million and \$5.4 million. This estimated capital cost includes a customer station containing telemetry, boilers, odourant system, filters, meters, heat exchangers and regulators as well as 50 metres of NPS 8 to connect the NPS Vector Pipeline to a customer station."

³ Greenfield Supplementary Evidence, Appendix 27, Natural Gas Cost Comparison.

⁴ Greenfield Supplementary Evidence, Appendix 28, Vector Costs.

⁵ Greenfield Supplementary Evidence, Appendix 27, Natural Gas Cost Comparison.

2.2 THE UNION SERVICE OPTION

On April 25, 2014 Union Gas filed an application for an Order granting leave to construct natural gas supply facilities that would serve as an alternative to the Vector Service Option. This application was assigned Board file EB-2014-0147. In the material filed by Union in that proceeding, the applicant states:

Union concluded that a connection to the Sarnia Industrial Line system was the best alternative for providing firm service to Greenfield South. This is the case because Greenfield South, through the Sarnia Industrial Line system, would be able to access reliable supply from multiple sources through the Dawn Hub at a cost comparable to that of a Vector connection.

... The estimated annual cost of the firm service offering was approximately \$2.2 million.⁶

Union's discussion of its offer of Rate T2 interruptible service suggests that this service would utilize the same connection.

In August 2013, Union made an offer to Greenfield South of [T2] interruptible service over a 10 year term with pricing set at 60% of firm service with no aid to construct required. The interruptible service offer did not require enhancements at the Courtright Station and Sarnia Industrial Station so those costs would not be incurred for service from the Sarnia Industrial Line system. The estimated annual cost of the 10 year interruptible service offering was approximately \$1.4 million.⁷

Based on Union's evidence, my analysis assumes that there is no need to consider a potential gas cost differential in comparing the options. However, the fact that the upgrade that would have been required in order for Union to offer Greenfield firm service will not be undertaken in the case of the Rate T2 interruptible service offering implies that Greenfield should expect that there would be interruptions and potential loss of revenue during periods of high demand on the Union system in that area if the Union Service Option proceeds.

It is my understanding that in the event of an interruption of gas service Greenfield would be deemed to be able to generate electricity under its contract with the OPA.

⁶ Exhibit A, Tab 1, page 12, lines 1 - 6.

⁷ Exhibit A, Tab 1, page 12, lines 23 - 27. Schedule 11 of Greenfield's pre-filed material in this proceeding shows a lower estimate of the annual cost of T2 interruptible service: \$1,071,000. It is my understanding that \$2.2 million figure includes expected storage charges, which are excluded from the lower figure used for purposes of my analysis.

Hence, if Greenfield is not able to generate power due to an interruption of its gas supply, this loss of supply can be expected to result in a loss of revenue and profit during the interruption.

The forecast costs that will be incurred for this service are:

- Initial capital costs consisting of:
 - The cost of Union facilities for the connection to the Sarnia Industrial Line system which is estimated to be \$6,000,000⁸ which would be paid by Union and would be recovered in Union's Rate T2 (i.e., it would not be recovered through a required capital contribution); and
 - The cost of the GEPP Natural Gas Utilization System from the Union facilities to the related metering facilities near the power plant which is assumed to be \$250,000, which is less than the cost of the corresponding facilities for the Vector Option since Union would provide the meter at its expense⁹;
- Annual Union demand and usage charges for T2 interruptible service which Union estimates to be \$1.071 million at current rates¹⁰;
- The annual operating cost for operations and maintenance related to gas transportation using the Union Service Option which is assumed to be the same as the cost of the corresponding facilities for the Vector Service Option which is estimated to be \$10,000¹¹; and
- The cost of credit support which is estimated by Greenfield to be \$402,000 initially based on Union's requirement to post an initial \$6,000,000 Letter of Credit which would decline over the term of the contract.¹²

⁸ Union Evidence in EB-2014-0147, Ex. A, Tab 1 Page 13, lines 17 – 18.

⁹ Greenfield Supplementary Evidence, Appendix 27, Natural Gas Cost Comparison.

¹⁰ Union Evidence in EB-2014-0147, Schedule 11. This figure is less than the estimated annual cost identified at Ex. A, Tab 1 Page 12, lines 26 – 27 which was \$1.4 million as noted above.

¹¹ Greenfield Supplementary Evidence, Appendix 29, Union Gas T2 Costs.

¹² Greenfield Supplementary Evidence, Appendix 27, Natural Gas Cost Comparison and Union Evidence in EB-2014-0147, Ex. A, Tab 1 Page 13, lines 3 – 7.

In order to use Union's Rate T2 firm service as the basis for a like-for-like (i.e., firm –for-firm service) comparison, it is noted that the differences in cost between interruptible and firm service that are indicated in the evidence are:

- Initial capital investment by Union would be higher by an amount that is not on the record, giving rise to a higher credit support cost; and
- The estimated annual Union charges would be \$2.2 million instead of \$1.4 million (or \$1.071 million)¹³.

3 IMPACT OF THE GREENFIELD AND UNION OPTIONS

Issue #1 in the Board's Issues List is:

1. *What are the cost/economic factors related to serving the GEP by Greenfield or Union, on both Greenfield and Union's other customers?*

The following two subsections compare the cost of the Vector and Union Service Options from the perspective of Greenfield and from the perspective of Union's other customers, respectively.

3.1 IMPACT ON GREENFIELD

Based on the cost information set out in section 2 above, the initial capital costs and annual costs are shown for each option in Table 1, along with the present value of those costs using a 6.7% discount rate¹⁴.

Table 1 shows that the present value of the estimated costs that would be incurred by Greenfield over the 20 year term of the contract, based on the assumed costs as set out in section 2.1 above, would be \$7,866,747. This figure is a slightly low cost estimate since it does not reflect future increases in the Vector tariffs, which are currently not known.

¹³ Union Evidence in EB-2014-0147, Exhibit A, Tab 1, page 12.

¹⁴ Greenfield Supplementary Evidence, Appendix 27, Natural Gas Cost Comparison.

Table 1: Greenfield Costs: Vector FT-H & OVS (Firm)

	Capital Cost & Contribution (2015)	Annual Costs (20 years)	Present Value (2015)
Vector Tap	\$1,125,000		
GEPP Natural Gas Utilization System (pipe & meter)	\$500,000		
Vector Demand & Usage Charges		\$530,000	
Annual O&M		\$10,000	
Credit Support		\$35,510	
Total Cost	\$1,625,000	\$575,510	\$7,866,747

Table 2 shows the initial capital costs and annual costs for the Union Service Option based on the cost information set out in section 2 above, along with the present value of those costs using a 6.7% discount rate.

Table 2: Greenfield Costs: Union Rate T2 Interruptible

	Capital Cost & Contribution (2015)	Annual Costs (20 years)	Present Value (2015)
GEPP NGUS (meter only)	\$250,000		
Union Rate T2 Interruptible		\$1,071,000	
Annual O&M		\$10,000	
Credit Support		\$402,000 (declining)	
Total Cost	\$250,000	\$1,483,000 (declining)	\$13,994,415

1 Table 2 shows that the present value of the estimated costs that would be incurred by
2 Greenfield over the 20 year term under Rate T2 interruptible service, would be
3 \$13,994,415.

4 This figure is a low estimate since it does not reflect future increases in the Union's Rate
5 T2 tariffs given that Union is proposing a 10 year contract term in its EB-2014-0147
6 application.

7 As noted above the Vector service offering (firm service) and the Union service offering
8 (interruptible) are not directly comparable. Given that Union has stated that it would be
9 necessary to reinforce its system in order to offer Greenfield firm service it is reasonable
10 to expect that under Union's Rate T2 interruptible service Greenfield's gas supply will be
11 interrupted periodically although it will be deemed to be running under its OPA contract.
12 Greenfield has estimated that each day that its gas supply is interrupted is likely to
13 result in a loss of net income in the order of \$135,000¹⁵. Hence, for example, if its gas
14 supply were interrupted 4 days a year on average over the 20 year term of the OPA
15 contract, it would experience an annual "cost", as compared to the Vector service, of
16 \$540,000¹⁶. The present value of this cost over the 20 year term of the OPA contract
17 would be \$5,856,620. This cost estimate is far more uncertain than the estimated costs
18 included in Table 2, since the actual extent of interruptions will be determined by a
19 myriad of capacity and demand circumstances. This uncertainty implies that Greenfield
20 will face substantially increased financial risk if it relies on interruptible service, which in
21 turn implies that it would expect to receive a higher return on equity if it were a rate
22 regulated entity like Union Gas.

23 For purposes of a like-for-like comparison, Table 3 shows the initial capital costs and
24 annual costs for the Union T2 firm service based on the cost information set out in
25 section 2 above, along with the present value of those costs using a 6.7% discount rate.

¹⁵ Greenfield Supplementary Evidence, Appendix 30, Cost of Interruptible Natural Gas Service – Potential Loss of Profits.

¹⁶ Greenfield Supplementary Evidence, Appendix 30, Cost of Interruptible Natural Gas Service – Potential Loss of Profits.

Table 3: Greenfield Costs: Union Rate T2 Firm

	Year 1 Capital Cost & Contribution (2015)	Annual Costs (20 years)	Present Value (2015)
GEPP NGUS (meter only)	\$250,000		
Union Rate T2 Firm		\$2,200,000	
Annual O&M		10,000	
Credit Support		\$402,000 ¹⁷ (declining)	
Total Cost	\$250,000	\$2,612,000 (declining)	\$26,239,089

Table 3 shows that the present value of the estimated costs that would be incurred by Greenfield over the 20 year term under Rate T2 firm service, based on the assumed costs as set out in section 2.2 above, would be \$26,239,089. This figure is a low estimate since it does not reflect possible future increases in the Union's Rate T2 tariffs.

3.2 IMPACT ON UNION'S OTHER CUSTOMERS

Since Union would incur no costs if the Greenfield application is approved by the Board and the GEPP receives its gas supply through a connection with Vector, there are no costs that would be passed through to Union customers. In essence, the impact on Union customers is the same as if the plant does not operate.

Viewed differently, to the extent that Union would have realized revenue from the Union connection that exceeds Union's incremental revenue requirement over the term of the contract, there would be an opportunity cost for Union's customers associated with a failure of Greenfield to connect to the Union system. The differential between Union's

¹⁷ This amount does not include the amount by which Letter of Credit would be higher for firm service since Union has indicated that its initial capital costs would exceed the \$6 million cost estimate that was applicable for the Rate T2 interruptible service that it has offered to Greenfield.

Rate T2 interruptible service revenue and forecast incremental revenue requirement is not currently on the record¹⁸. It may be noted, however, that by definition Union expects revenues to be equal to or exceed its costs in present value terms over the 10 year term of the proposed contract since there is no contribution capital proposed in its offer.

As is typical with any new connection, it can be expected that Union's total revenue requirement would increase by more than the incremental revenue in the initial years. Over time, Union's revenue requirement associated with these assets would decline as the assets are depreciated and rates could be expected to increase; hence, the upward pressure on rates would become downward rate pressure later in the contract term.

It is noted that Schedule 11 of Union's evidence filed in EB-2014-0147 indicates that the project NPV for the 10 year term of the propose Rate T2 interruptible service is \$403,000. This represents the present value of the combined benefit to the shareholder (Union) and other customers of providing the service to Greenfield. This benefit would flow to the shareholder for the remainder of the term of Union's current IRM and the then current margin would revert to customers at the next rebasing.

4 IMPACT OF GRANTING A CERTIFICATE TO GREENFIELD

Issue #5 in the Board's Issues List is:

- 5. Will granting a Certificate to Greenfield in Union's service area adversely impact Union and Union's ratepayers? For example, will there be stranded assets, lower profit, decreased revenues, etc.?*

Greenfield's GEPP is not currently a customer of Union Gas; hence, it is reasonable to assume that as a prudent operator of its regulated assets Union would not have invested in any facilities to serve this customer in the absence of a signed connection agreement. Hence, it is reasonable to assume that there are currently no facilities that have been constructed in order to accommodate the requirements of this project. This perception is confirmed by Union's evidence (cited above) that a system upgrade would be required in order to provide Rate T2 firm service to GEPP.

¹⁸ It is anticipated that this information will be obtained during the balance of this proceeding.

1 It follows that there will be no stranded assets if the Greenfield application is approved
2 by the Board and the Vector contract is relied on for GEPP's gas supply.

3 As indicated in the preceding section, Union's revenue will not decline relative to the
4 status quo revenue (i.e., without Greenfield's GEPP as a customer) although its
5 revenue will be lower than it would be if Greenfield were to become a Rate T2 customer
6 of Union.

7 To the extent that Union has lower revenue than it would if Greenfield's GEPP were a
8 Union Rate T2 customer, the lower revenue will correspond to:

- 9 • A lower Union revenue requirement since Union will not invest \$6 million in the
10 facilities required to connect GEPP to Union's Sarnia Industrial Line system;
- 11 • Foregone profit for Union in the form of:
 - 12 • A reduced equity return due to the reduced rate base; and
 - 13 • A variance in in the actual return on equity, relative to its allowed return
14 associated with the incremental rate base required to serve GEPP; and
- 15 • Possibly a foregone future rate reduction at the time of Union's next rebasing,
16 which would benefit other customers, equal to the margin earned on the service
17 provided to GEPP (i.e., the differential between the incremental revenue and the
18 incremental revenue requirement).

19 **5 CONCLUSION**

20 Table 4 provides a summary of the year 1 capital costs and contribution, the annual
21 costs over the term of the contract and the present value of these costs over the 20 year
22 term of the OPA contract as presented in Tables 1, 2, and 3 above. Table 4 also shows
23 the difference between the Vector and Union Service Options.

Table 4: Summary of Comparative Greenfield Costs

Row		Year 1 Capital Cost & Contribution (2015)	Annual Costs (20 years)	Present Value (2015)
A	Vector FT-H & OVS (Firm)	\$1,625,000	\$575,510	\$7,866,747
B	Union Rate T2 Interruptible	\$250,000	\$1,483,000 (declining)	\$13,994,415
C	Union Rate T2 Firm	\$250,000	\$2,612,000 (declining)	\$26,239,089
D	Row B – Row A	(1,375,000)	\$907,490	\$6,127,668
E	Row C – Row A	(1,375,000)	\$1,036,490	\$18,372,342

Table 4 shows that the present value of Greenfield's costs are estimated to be more than \$6 million higher under the Union Service Option (Rate T2 Interruptible service) than its costs would be under the Vector Service Option, which is a firm service, not taking into account the cost to Greenfield of its gas service being interrupted periodically. Greenfield has estimated that the present value of its lost profit would be \$5,856,620 assuming four days of interrupted gas supply annually over the 20 year term of the OPA contract. This impact would increase the cost differential to almost \$12 million. While this differential is substantial, it is less than the estimated differential between the Vector Service Option and reliance on Union Rate T2 firm service which is over \$18 million.

Schedule 11 of Union's evidence filed in EB-2014-0147 indicates that the project NPV for the 10 year term of the propose Rate T2 Interruptible service is \$403,000 which represents the present value of the combined benefit of the service to the shareholder and other customers.

1

APPENDIX A: CV OF JOHN TODD

PRESIDENT

John Todd has specialized in government regulation for over 35 years, addressing issues related to price regulation and deregulation, market restructuring to facilitate effective competition, and regulatory methodology. Sectors of primary interest in recent years have included electricity, natural gas and the telecommunications industry. John has assisted counsel in over 200 regulatory proceedings and provided expert evidence in over 100 hearings. His clients include regulated companies, producers and generators, competitors, customers groups, regulators and government.

PROFESSIONAL OVERVIEW

Founder of Elenchus Research Associates Inc. (ERAI) 2003

- ERAI was spun off from ECS (see below) as an independent consulting firm in 2003. There are presently twenty-five ERAI Consultants and Associates. Web address: www.elenchus.ca

Founded the Canadian Energy Regulation Information Service (CERISE) 2002

- CERISE is a web-based service providing a decision database, regulatory monitoring and analysis of current issues on a subscription basis. Staff are Rachel Chua and rotating co-op students. Web address: www.cerise.info

Founded Econalysis Consulting Services, Inc., (ECS) 1980

- ECS was divested as a separate company in 2003.
- There are presently four ECS consultants: Bill Harper, Mark Garner, Shelley Grice and James Wightman. Web address: www.econalysis.ca

Education

1975	Masters in Business Administration in Economics and Management Science, University of Toronto
1972	Bachelors of Science in Electrical Engineering, University of Toronto

PRIOR EMPLOYMENT

Ontario Economic Council, Research Officer (Government Regulation)	1978 - 1980
Research Assistant	1973 - 1978
Univ. of Toronto, Faculty of Management Studies	
Bell Canada	1972 - 1973
Western Area Engineering	

REGULATORY/LEGAL PROCEEDINGS

Provided expert evidence and/or assistance to the applicant or another participant for:

Before the Ontario Energy Board

2013	<ul style="list-style-type: none">• Enbridge Gas Distribution (EB-2012-0459) (Evidence: Cost Allocation Methodology, with Michael Roger)• IESO Fees Case (Evidence: Review of IESO Fees Billing Determinant)
2012	<ul style="list-style-type: none">• Hydro One Transmission 2013-2014 Revenue Requirement (EB-2012-0031) (Evidence: Ontario Cost Allocation and Export Tariff Service, with Michael Roger)
2011	<ul style="list-style-type: none">• Cost Allocation evidence for several Ontario electricity distributors (2012 Cost of Service)
2010	<ul style="list-style-type: none">• Natural Resource Gas Rate Case (Evidence: Proposed Incentive Regulation Mechanism)• Cost Allocation evidence for several Ontario electricity distributors (2011 Cost of Service)
2009	<ul style="list-style-type: none">• Hydro One Distribution Rate Case (Evidence: Principles for Density Based Rates)• Cost Allocation evidence for several Ontario electricity distributors (2010 Cost of Service)
2008	<ul style="list-style-type: none">• Provided technical and strategic assistance to eight second tranche electricity distribution companies in preparing their rebasing applications for rates for 2009. (Evidence: Cost allocation model updates (for two LDCs))
2007	<ul style="list-style-type: none">• Third generation Incentive Regulation (Evidence: Inclusion of a capital expenditure factor)• Provided technical and strategic assistance to six first tranche electricity distribution companies in preparing their rebasing applications for rates for 2008.
2006	<ul style="list-style-type: none">• Cost Allocation Review (EB-2005-0252)• Transmission Revenue Requirement Adjustment Mechanism (EB-2005-0501)• Second Generation Incentive Regulation Mechanism (EB-2006-0088-0089) (Evidence: Capital Investment Factor)
2005	<ul style="list-style-type: none">• Sub-metering Review (EB-2005-0317) (Evidence: Comments on Staff Discussion Paper on Sub-metering)

- Union Gas Rate Hearing
(Evidence: Evaluation of Avoided Cost Methodology)
- 2004
 - Enbridge Gas Distribution 2005 Rates (RP-2003-0203)
(Evidence: Determining the Fair Rate of Return for a 15-Month Period)
(Evidence: Stand-alone System Supply Costs)
- 2003
 - Generic Proceeding on Electricity Distributor Boundary Changes (RP-2003-0044)
(Evidence: The Benefits of Competition in the Electrical Distribution Sector)
 - Union Gas Limited, 2004 Rates (RP-2003-0063)
(Evidence: Monthly Demand Charge for Brighton Beach Power Station (with Paula Zarnett))
- 2002
 - Union Gas Limited, 2003 Rates (RP-2002-0130/EB-2002-0363)
(Evidence: Review of Union's Delivery Commitment Credit (with Joyce Poon))
- 2001
 - Union Gas, Further Unbundling of Rates (RP-2000-0078)
(Evidence: Regulatory Framework and Cost Responsibility)
 - Hydro One Networks, Cost Allocation and Rate Design for RP-2000-0023
(Evidence: Cost Allocation Model (with Bruce Bacon))
- 1999
 - Propose Electric Distribution Rate Handbook
(Evidence: Comments on Staff Proposals)
 - Standard Supply Service Code, (RP-1999-0040)
(Evidence: Comments and Alternate Proposal)
 - Enbridge, Year 2000 Rate Application (RP 1999-0001)
 - Enbridge, Performance Based Regulation Application (EBRO 497-01)
 - Enbridge, Ancillary Service Separation & Rental Wind Down (EBO 179-14/15)
- 1998
 - Consumers Gas, 1999 Test Year Rates Application (EBRO 497)
 - Union Gas, Separation of Ancillary Services (EBO 177-17)
- 1997
 - Town of Aurora, Franchise Renewal (EBA 795)
 - Union Gas, Customer Information System (EBO 177-15)
 - Legislative Change (EBO 202)
 - System Expansion Generic Hearing (EBO 188)
 - Consumers Gas, 1998 Test Year Rates Application (EBRO 495)
- 1997
 - Ten Year Market Review Working Group
 - Union Gas/Centra Gas Amalgamation Application
- 1996
 - Union Gas/Centra Gas, 1997 Rates Application (EBRO 493/494)
 - Consumers Gas, 1997 Test Year Rates Application (EBRO 492)
 - Ontario Hydro, Review of 1997 Rates (HR-24)
- 1995
 - Ontario Hydro, Review of 1996 Rates (HR-23)
 - Consumers Gas, 1996 Test Year Rates Application (EBRO 490)
 - Union Gas, 1996 Test Year Rates Application (EBRO 486)
 - Union Gas/Centra Gas, Shared Services Hearing (EBRO 486/489)
- 1994
 - Centra Gas, 1995 Test Year Rates Application (EBRO 489)
 - Ontario Hydro International Hearing (EBRLG - 36)
 - Ontario Hydro Corporate Restructuring and 1995 Rates (HR-22)
 - Consumers' Gas, 1995 Test Year Rate Case (EBRO 487)
- 1993
 - Joint Hearing on Direct Purchase Issues (EBRO 474-B/476/483/484/485)
(Evidence: Return-to-System Policies for Ontario LDCs)

- 1993
 - Centra Gas, 1994 Test Year Rates Application (EBRO 483/484)
 - Consumers' Gas, 1994 Test Year Rate Case (EBRO 485)
 - Union Gas, 1994 Test Year Rate Case (EBRO 476-03)
(Evidence: Equity Effects of Union's Depreciation Study)
- 1992
 - Consumers' Gas, 1993 Test Year Rate Case (EBRO 479)
 - Union Gas, 1993 Test Year Interim Rate Increase (EBRO 476)
- 1991
 - Consumers' Gas, 1992 Test Year Rate Case (EBRO 473)
(Evidence: Direct Purchase Issues)
 - Union Gas, Application for Rates and Cost of Gas (EBRO 462)
 - Centra Gas, 1992 Test Year Rates Application (EBRO 474)
(Evidence: Direct Purchase Issues)

Before the Public Utilities Board of Manitoba

- 2013
 - Need for and Alternatives to Manitoba Hydro's Preferred Development Plan
(Evidence: Review of Manitoba Hydro's Load Forecast)
(Evidence: Review of Demand Side Management and Energy Efficiency issues)
- 2005
 - Manitoba Public Insurance, 2006 General Rates Application
(Evidence: Rate Stabilization Reserve and Related Issues)
- 2003
 - Centra Gas Manitoba, 2003/04 General Rate Application,
(Evidence: Comments on the Future Regulatory Methodology)
- 2002
 - Manitoba Hydro, Rate Status Update
(Evidence: Manitoba Hydro's Financial Requirements and Proposed Curtailable Rate Program, with William Harper)
 - Manitoba Hydro, Integration Proceeding
(Evidence: Assessment of Manitoba Hydro/Centra Manitoba Integration, with William Harper)
- 2001
 - Manitoba Public Insurance, 2002 General Rate Application
(Evidence: Rate Stabilization Issues)
 - Centra Gas Manitoba, Primary Gas Rates
(Evidence: Centra Gas Manitoba's Rate Setting Methodology)
- 2000
 - Centra Gas Manitoba, Rate Management
 - Manitoba Public Insurance, 2001 General Rate Application
(Evidence: MPI's Rate Stabilization Reserve Surplus)
 - Manitoba Hydro, Surplus Energy Program
- 1999
 - Centra Gas Manitoba, Western T-Service and Agency Billing and Collection Service
(Evidence: Assessment of the Proposals of the Company)
 - Manitoba Public Insurance, 2000 General Rate Application
(Evidence: Rate Stabilization Reserve Risk Analysis)
- 1999
 - Manitoba Hydro Purchase of Centra Manitoba
(Evidence: Implications for Rates and the Regulatory Regime)
- 1998
 - Centra Gas Manitoba, Rates Flowing from Board Order 79/98
 - Manitoba Public Insurance, 1999 General Rate Application
(Evidence: Rate Stabilization Reserve, Allocation of Costs and IT Expenditures)

- Centra Gas Manitoba, Feasibility Cost Assumptions Application
(Evidence: Comments on Centra's Proposed Changes to the Feasibility Test)
- Centra Gas Manitoba, 1998 Test Year General Rate Application
(Evidence: Comments on Centra's Proposed Customer Information System)
- 1997 • Centra Gas Manitoba, Ste. Agathe Franchise Application
- Manitoba Hydro, Review of ISE/DFH/SESS Programs
- Manitoba Public Insurance, 1998 General Rate Application
- Centra Gas Manitoba, Continuation of Shared Services Application
- 1996 • Centra Gas Manitoba, 1997 General Rate Application
- Centra Gas Manitoba, Cost of Service and Rate Design Review
- Generic Hearing on the Role of the LDC in Manitoba
(Evidence: The Future Role of Centra Manitoba in the Supply of Natural Gas)
- Manitoba Hydro, General Rate Application, 1996 and 1997
- 1995 • Centra Gas Manitoba, Price Management and Direct Purchase Issues
- Application of the Gladstone, Austin Natural Gas Co-op Ltd.
- Manitoba Hydro, Review of Prospective Cost of Service Study (GRA)
(Evidence: Comments on the Prospective COSS Methodology)
- 1995 • Manitoba Hydro, Dual Fuel Heating and Industrial Surplus Energy Rates
- Centra Gas Manitoba, Rural Expansion/Brandon Facilities Upgrade Hearings
- Centra Gas Manitoba, 1995 General Rate Application
(Evidence: Review of Centra's Weather Normalization Methodology)
- 1994 • Centra Gas Manitoba, Rural Expansion Hearing
(Evidence: Rural Mains Expansion Feasibility Test)
- Centra Gas Manitoba, Future Test Year Application
(Evidence: Comparison of the Future and Historic Test Year methods of RB-ROR regulation)
- Manitoba Hydro, General Rate Application, 1994 and 1995
- 1993 • Centra Gas Manitoba, Inc. 1994 General Rate Application
- Manitoba Telephone System, Interconnect Hearing
- Manitoba Telephone System, 1993 General Rate Application
- 1992 • Manitoba Telephone System, 1992 General Rate Application
(Evidence: The appropriate debt ratio for a crown corporation)
- Manitoba Hydro, General Rate Application, 1992
- Centra Gas Manitoba, Inc. General Rate Application
- 1991 • Manitoba Telephone System, General Rate Application, 1991
- Centra Gas Manitoba, Inc. Application for Interim Refundable Rate Increase
- 1990 • Manitoba Hydro, Major Capital Projects
(Evidence: Hydro's 1000MW Ontario Sale and system planning risks)
- ICG Utilities (Manitoba) Ltd., Generic Hearing on Rate Setting
(Evidence: Implications of using a future versus historic test year)

Before the British Columbia Utilities Commission

- 2006 • British Columbia Transmission Corporation, 2006 Transmission Revenue Requirement
- 2005 • Insurance Corporation of British Columbia, Financial Allocation Workshop

- FortisBC, General Rates Application
(Evidence: Review of FortisBC Performance under PBR, 1996 to 2004) w. S. Motluk
- 2004 • Insurance Corporation of British Columbia, Financial Allocation Methodology
(Evidence: Review of ICBC's Financial Allocation Methodology, with ICBC)
- 2002 • Pacific Northern Gas West and Northeast, General Rate Application
- 2001 • Utilicorp Networks Canada (formerly West Kootenay Power), Annual Review, 2001
- 2000 • Pacific Northern Gas, 2000-01 General Rate Application (negotiated)
- West Kootenay Power, Annual Review, 2000
- 1999 • Centra Gas BC, 2000-02 Rates Application (negotiated)
- BC Gas, Market Unbundling Group (Report to the BCUC)
- West Kootenay Power, 2000-02 Rate Application (negotiated)
- Pacific Northern Gas, 1999-00 General Rate Application (negotiated)
- Annual Reviews of WKP and BC Gas
- West Kootenay Power, Transmission Access Application
- 1998 • BC Gas, Southern Crossing Pipeline Application (Revised)
- Pacific Northern Gas, 1998-99 Revenue Requirement/Rate Design
(Evidence on PNG's Cost of Service Methodology)
- 1997 • BC Gas, Southern Crossing Pipeline Application
(Evidence on the impact of ratepayer risks related to the SCP due to developments in the competitive environment in the natural gas sector)
- Annual Reviews of WKP and BC Gas.
- West Kootenay Power, Cost of Service and Rate Design (negotiated settlement)
- 1997 • Pacific Northern Gas Shared Services
- Retail Access and Unbundling Tariff Hearing (suspended)
(Evidence on the impact of market restructuring on costs and rates)
- 1996 • BC Gas - 1996 Rate Design (negotiated settlement)
(Evidence: Alternative Methods for Allocating Distribution Mains Costs to Customer Classes)
- BC Gas - 1996-1997, Revenue Requirement & IRP (negotiated settlement)
- West Kootenay Power - Brilliant Generating Station Transactions
- West Kootenay Power - General Rate Application/IRP (negotiated settlement)
- 1995 • Generic System Expansion Hearing
- BC Gas - General Rate Application (negotiated settlement)
- 1994 • BC Hydro, 1994 Rate Increase Application
- West Kootenay Power, 1994/95 Rates and Integrated Resource Plan
(Evidence: Review of WKP's Integrated Resource Plan)
- 1993 • BC Hydro, 1993 Rate Increase Application
- BC Gas, Rate Design Hearing
(Evidence: Analysis of BC Gas' cost studies and their use in setting rates)
- BC Gas - General Rate Application (settled and withdrawn prior to hearing)
- Generic Hearing into the New Provincial Domestic Natural Gas Supply Policy

Before the Régie de l'énergie

- 2001
 - Hydro Québec, Transmission Rates (R-3401-98)
(Evidence: HQT's Transmission Tariff Rate Design Methodology, with B. Bacon)
 - Inclusion of Operating Costs in the Gasoline Price Floor Set By the Régie
(Evidence: Review of Principles) (Régie File R-3457-2000)
- 2000
 - SCGM Unbundling of Tariffs (R-3443-2000)
(Evidence: SCGM's Unbundling Tariff Proposal, with R. Higgin)
 - Gazifère, Rates (R-3446-2000)
(Evidence: Cash Working Capital and Other Issues, with G. Morrison)
- 1999
 - Operating Costs Borne by Gasoline or Diesel Fuel Retailers (R-3399-98)
(Evidence: Methodology for Determining Operating Costs)
 - Small Hydro Within Hydro Quebec's Resource Plan (R-3410-98)
(Evidence: Determining the Purchase Price for Small Hydro)
- 1999
 - Gazifère, Year 2000 Rate Case
(Evidence: Assessment of Cost Allocation and Revenue Sharing Proposals)
- 1998
 - Hydro Québec, Rate-Setting Methodology Under s. 167 of the Régie de l'énergie Act.
(Evidence: Recommendations on Regulatory Framework)
 - Hydro Québec, The Role of Wind Power in the Quebec Energy Portfolio
(Evidence: Issues Related to Establishing a Set-Aside)

Before the Alberta Energy and Utilities Board

- 2001
 - Generic, Gas Rate Unbundling (2001-093)
(Evidence: Canadian Experience and Approaches)
 - Generic, Gas Cost Recovery Rate Methodology (2001-040)

Before the Newfoundland & Labrador Board of Commissioners of Public Utilities

- 2013
 - Newfoundland Hydro General Rate Application
 - Newfoundland Power, General Rate Application (2013-2014)
- 2009
 - Newfoundland Power, 2010 General Rate Application
(Evidence: Assessment of five hearing issues)
- 2007
 - Newfoundland Power, 2008 General Rate Application
(Evidence: Regulatory instruments and other issues)
- 2006
 - Newfoundland Power, 2007 Amortization and Cost Deferrals Application
- 2005
 - Newfoundland Power, 2006 Accounting Policy Application
(Evidence: Assessment of Newfoundland Power's Proposals)

Before the New Brunswick Energy and Utilities Board

- 2013
 - New Brunswick Power, PLGS Deferral Account (Matter No. 171)
(Evidence: Options for the Recovery of the Point Lepreau Nuclear Generating Station Deferral Account Balance)
- 2010
 - New Brunswick Power Distribution Corp, 2010 Rate Review

- 2009
 - EGNB, Development Period hearing
 - New Brunswick Power Distribution Corp, 2009 Rate Review
- 2008
 - New Brunswick Power Distribution Corporation, PDVSA Deferral Account
- 2007
 - New Brunswick Power Distribution Corporation, PDVSA Deferral Account (Evidence: Treatment of the Petroleos De Venezuela, S.A. (PDVSA) Settlement in Setting Rates)

Before the Nova Scotia Utility and Review Board

- 2013
 - NSPI Capital Expenditures for the South Canoe Wind Project (CI# 42127) (Evidence: Treatment of costs associated with competitive wind power project)
 - Town of Antigonish Electric Utility Large User Rate (Evidence: Cost Allocation)
- 2011
 - Nova Scotia Power, 2011 Annual Capital Expenditure Plan
 - Nova Scotia Power, Load Retention Tariff (Evidence: Load Retention Tariff Methodology)
 - Heritage Gas, 2012 General Tariff Application
 - Efficiency Nova Scotia, Compliance Filing (Cost Allocation Methodology Report)
- 2008
 - Town of Antigonish Electric Utility rate process (Evidence: Comments on the Town of Antigonish Electric Utility Revised Cost of Service Study)

Before the National Energy Board

- 1999
 - BC Gas, Southern Crossing Project

Before the Canadian Radio television and Telecommunications Commission

- 2010
 - Obligation to Serve and Other Matters (NC 2010-43) (Evidence: Analysis of Issues Related to Local Service Subsidy)
- 2006
 - Review of Price Cap Framework (PN 06-5)
- 2001
 - Implementation of Price Cap Regulation for Québec-Téléphone & Télébec (PN 01-36) (Evidence: Designing a Consistent Price Cap Regime)
 - Price Cap Review (PN 01-37) (Evidence: The Second Generation Price Cap Regime)
 - Recovery of 2000 and 2001 Income Tax Expense (PN 00-108) (Evidence: Appropriate Recovery of MTS Income Tax Expense)
- 2000
 - Scope of Price Cap Review (PN 00-99)
 - Sunset Rule for Near-Essential Facilities (PN 00-96)
 - Access to Municipal Property in the City of Vancouver (PN 99-25)
 - Review of Contribution Collection Mechanism (PN 99-6) (Evidence: Review of Contribution Collection Mechanism)
 - Review of Direct Connection Charges

- 1999
 - Review of Frozen Contribution Rate Policy (PN 99-5)
(Evidence: Comments on the Frozen Contribution Rates Policy)
 - High Cost of Serving Areas (PN 97-42)
- 1998
 - Local Number Portability Start-up Costs (PN 98-10)
 - Competition in the Provision of International Telecommunications Services (PN 97-34)
- 1997
 - Implementation of Price Caps (PN 97-11)
 - Review of Joint Marketing Restrictions (PN 97-14/97-21)
 - Forbearance from Regulation of Toll Services Provided by Dominant Carriers (96-26)
 - -Regulation of Telecom Services Offered by Broadcast Carriers (PN 96-36)
- 1996
 - Scope of Contribution (PN 96-19)
 - Bell Canada, Business Rate Restructuring (PN 96-13)
 - Price Cap Regulation and Related Issues (PN 96-8)
(Evidence: Evidence addressing the design of the price cap system)
- 1996
 - Local Interconnection and Network Component Unbundling (PN 95-36)
(Evidence: Mechanisms for Collecting Contribution)
 - AGT, General Rate Application
 - Local Services Pricing Options (PN 95-49/95-56)
(Evidence: Mechanisms for Pursuing the Goal of Universally Available Basic Telephone Service in Low-Penetration Exchanges)
- 1995
 - Review of Phase II (PN 95-19)
 - Regulatory Framework for Ontario Independent Telephone Cos. (PN 95-15)
 - Split Rate Base Hearing (PN 94-52, 94-56 and 94-58)
(Evidence: Applicability of the Decision 94-19 Regulatory Framework to MTS)
- 1995
 - Review of the Regulatory Framework of Teleglobe Canada Inc. (PN 95-11)
 - Review of the Quality of Service Indicators (PN 94-50)
 - Bell SYGMA Hearing (PN 94-53)
- 1994
 - Regulatory Framework
(Evidence: A Proposed Regulatory/Structural Alternative)
 - Maritime Tel, General Rate Increase
 - Island Tel, General Rate Increase
 - BC Tel, General Rate Increase
 - AGT, General Rate Increase
 - Northwestel, General Rate Increase (paper hearing)
 - Bell Canada, General Rate Increase
 - Teleglobe, Annual Construction Program Review (paper hearing)
 - New Brunswick Tel, Annual Construction Program Review (paper hearing)
- 1992
 - Bell Canada - 1992 Annual Construction Program Review
 - AGT - 1992 Annual Construction Program Review
- 1991
 - Bell Canada - 1991 Construction Program Review
- 1990
 - Maritime Telegraph & Telephone, Review of Revenue Requirement 1990-91
(Evidence on the impact of modernization)
 - Island Telephone Company, Review of Revenue Requirement 1990-91
(Evidence on the impact of modernization)

- Review of Cable Television Regulations
(Evidence on alternative forms of regulation)

Before the Ontario Telephone Services Commission

- 1992 • Review of Rate-of-Return Regulation for Public Utility Telephone Companies.
(Evidence: The need for OTSC regulation of municipal public utility telcos)

Before the Ontario Securities Commission

- 1985 • Securities Industry Review
(Evidence: Industry structure and the form of regulation)
- 1983 • Role of Financial Institutions in the Securities Industry
(Evidence: Discount Brokerage and the Role of Financial Institutions)
- 1982 • Institutional Ownership of, and Diversification by, Securities Dealers
(Evidence: The impact of foreign and institutional entry)
- 1981 • The Unfixing of Brokerage Commission Rates
(Evidence: The impact of price competition on the securities industry)

Before the Ontario Municipal Board

- 1995 • Appeal of Boundary Expansion by Lincoln Hydro Electric Commission
(Affidavit prepared on the tests for boundary expansions)
- 1992 • Evidence dealing with the *Rental Housing Protection Act, 1989*

Before the Supreme Court of Ontario

- 1990 • Challenge of the Residential Rent Regulation Act (1986) under the *Canadian Charter of Rights and Freedoms*
(Evidence: The impact of rent regulation on Ontario's rental housing market)

Before the Saskatchewan Court of Queen's Bench

- 1993 • Evidence regarding market dynamics and competition policy.

Non-Hearing Processes (Task Forces, Lawsuits and Arbitrations)

- 2012 • Review of SaskPower's Cost Allocation Methodology (with Michael Roger)
- 2011 • Developing a regulatory training course for Ontario electricity distributors
- 2010 • Expert Advisor to the Ontario Energy Board for the Cost Allocation Review
- 2009 • Expert Advisor to New Brunswick Department of Energy on regulatory

- matters related to the proposed purchase of NB Power assets by Hydro Quebec
- 2008 • Expert Advisor to Ontario Energy Board for the Rate Design Review
- 2007 • Workshop on Electricity Market Design for the Electricity Regulatory Authority of Vietnam
- 2006 • Workshop on Regulatory Methodology for the Government of Vietnam (electricity regulator, Ministry of Energy and state-owned enterprises) with Marie Rounding
- 2004 • Vitamin Price Fixing
- Allocation of debt related to separation of electric utilities
- 2001 • BC Gas, Second Generation Performance Based Regulation Negotiation
- Telecommunications Industry, Price Cap Review Negotiation
- 1999 • PBR Task Force (Electricity), Ontario Energy Board
- Market Unbundling Group (BC Gas), British Columbia Utilities Commission
 - Western Supply Transportation Service (Centra Gas Manitoba), Manitoba PUB
- 1998 • Market Design Task Force, Ontario Energy Board
- 1997 • Ten Year Market Review, Ontario Energy Board

Commercial Arbitrations

Current: Two arbitrations in Alberta

- 2013 • Analysis of options for pricing of live chickens under Regulation 402
- 2006 • Disputed Power Purchase Agreement (PPA)
- 2004 • Evidence on the interpretation of a Gas Purchase Agreement (GPA)

Facilitation Activities

- 2010 • Strategic Planning Process for the Boards of Directors of an Ontario electricity distributor
- 2008 • Strategic Planning Processes for the Boards of Directors of electricity distributors
- 2007 • Stakeholder facilitation for Ontario Power Generation in relation to its Regulated Payment Amounts
- 2004 • Ontario Energy Board, Review of Further Efficiencies in the Electricity Distribution Sector (RP-2004-0020) (with IBM Consulting)
- Visioning Session: Structural Review of an association of Ontario electric LDCs
 - Business Plan Visioning Session with the Board of Directors of an Ontario electric LDC
- 2000 • Ontario Energy Board, Distribution Access Rule Task Force

Other Regulatory Issues Researched for Clients

- Analysis of strategic options for an Ontario electricity distributor
- Review of productivity enhancements for an Ontario electricity distributor
- Review of Conditions of Service for several Ontario electricity distributors
- Review of Economic Evaluation models and methodologies for several Ontario electricity distributors
- “Benchmarking for Regulatory Purposes” (with First Quartile Consulting) for the Canadian Association of members of Regulatory Tribunals (CAMPUT)
- “Review of Potential Regulatory Cost Measures” (a Report for the OEB)
- “Survey of Regulatory Cost Measures” (a Report for the Ontario Energy Board)
- OEA Working Dialogue on OEB Regulating Efficiency and Effectiveness (2007)
- Regulatory Cost Measures for the Ontario Energy Industry (2007)
- “Designing an Appropriate Lost Revenue Adjustment Mechanism (LRAM) for Electricity CDM Programs In Ontario”
- Small Hydro PPA Terms and Conditions
- Ontario Electricity Supply Mix
- Mitigation of Regulatory Risk for Utilities
- Regulatory Benchmarking
- Cross-jurisdictional Survey of Regulatory Efficiency
- Renegotiation of Municipal Franchise Agreement

Regulated Industries:

Papers and Research Projects

- *Report on the Effects of Separating Hydro One’s Transmission and Distribution Functions.*
- *Report on Hydro One Privatization Options.*
- *The Impact of Complete Deregulation on Market Efficiency of the Gas and Electric Industry in Alberta Post-2005 Assuming Current Market Dominance.*
- *Analysis of a Possible Equity Infusion for Ontario Hydro: Potential Implications for Financing Costs.*
- *Volatility in the Ontario Electricity Market, by ECS with Snelson International Energy.*
- *An Assessment of Price Volatility in the Ontario Electricity Market.*
- *Analysis of MTS Privatization Plan.*
- *Comments on the Issues Identified in the December 1995 Working Paper of the Advisory Committee on Competition in Ontario’s Electricity System, A submission on behalf of The Power Workers’ Union.*
- *Telecommunications Municipal/Franchise Tax Design Options (with Dr. E. Slack).*
- *The Implications of Phase III Costing for the Rates and Toll Settlements of Independent Telephone Companies (with Andrew Roman).*

- Submission to the Department of Communications (Canada) (August 1990): *Towards Competition in Telecommunication and Cable TV Services: A Single Switched Broadband Distribution Facility* (Comments of the Public Interest Advocacy Centre, with Robert E. Horwood and Gaylord Watkins).
- Submission to the Department of Communications (Canada) (May 1990): *Fibre Optic Networks: Facilitating Competition in Telecommunication and Television Services for the Benefit of All Users* (Comments of the Public Interest Advocacy Centre, with Robert E. Horwood and Gaylord Watkins).
- Submission to the CRTC concerning cable television regulation on behalf of the Public Interest Advocacy Centre (with Carmen Baggaley).
- Analysis of financing alternatives for Toronto Hydro's 13.8 kV conversion program for the City of Toronto Parks and Recreation Department.
- Analysis of the MacEachen White Paper on "Inflation and the Taxation of Personal Investment Income" for the Ontario Economic Council.
- Submission to the Parliamentary Committee commenting on the April 1985 Finance Green Paper, "The Regulation of Financial Institutions: Proposals for Discussion" prepared on behalf of the Public Interest Research Centre.

Financial Markets:

Papers and Research Projects

- Analysis of the potential consumer benefits from insurance retailing by financial institutions in Canada for the Public Interest Research Centre.
- Development of a financial model for projecting the financial implications of alternative corporate structures.
- Developed model for projecting cash flows for a major land development project.
- Analysis of the impact on the capital markets of changes to the investment rules for public sector pension funds for the Task Force on the Investment of Public Sector Pension Funds (with Prof. John Bossons).
- Review of the OSC proposals and alternatives for relaxing ownership restrictions in the securities industry prepared for the Ontario Securities Commission for submission to the Premier's Office (with Prof. Tom Courchene).
- Analysis of the Impact of Opening the Ontario Securities Market on the Economy of Toronto for a major Canadian securities dealer.
- Response to the December 1984 "Interim Report of the Ontario Task Force on Financial Institutions" for Consumer and Corporate Affairs (Canada).
- Report on functional integration in the Canadian financial services sector for the Australian Merchant Bankers' Association.
- Analysis of the Canadian and American Experience with Partially Negotiable Brokerage Commission Rates for the Australian Merchant Bankers Assoc.

- Served as a North American contact for the Office of Fair Trading (United Kingdom) providing information on developments in the debate over unfixing of brokerage fees, entry of banks into securities dealing and related matters.
- Development of a computerized package for analyzing the effects of alternative tax systems on business investment. Prepared for the Ontario Government reference to the Ontario Economic Council to study a separate personal income tax for Ontario.
- "An Analysis of the Use of Component Internal Rates of Return for Fund Performance Measurement" for Canadian National Investments.
- Analysis of Canadian Stock Market Data (development of a computer package for evaluating investment portfolio efficiency).
- Redesign and periodic updating of the financial, analysis methodology for Alfred Bunting and Co.
- Developed an APL computer package for teaching Business Finance concepts.

Housing:

Papers and Research Projects

- Potential Impact of Rent De-Control on Selected Markets in Ontario
- Review of the Ontario Auditors analysis of the cost of social housing.
- *Future Social Housing Delivery Opportunities in Metro Toronto.*
- Development of a model for projecting core need households to 2011.
- Analysis of the City of Toronto's approach to the valuation of certain properties developed under the *Rental Housing Protection Act, 1989.*
- *Security of Tenure Issues Pertaining to Co-operative Housing.*
- *Rent Regulation in Ontario*, a report prepared as expert Evidence for a Charter of Rights challenge of Ontario's system of rent regulation (with W.T. Stanbury).
- Feasibility study of enhancements to long term housing forecasting models (demographic factors) with David Foot.
- Feasibility study of enhancements to long term housing forecasting models (economic factors).
- Review of the housing situation in the Greater (Toronto) Metropolitan Region in 1988 and the next decade for the Ontario Ministry of Housing.
- Treatment of the Assisted Rental Program under rent regulation for the Ontario Ministry of Housing.
- Alternatives for implementing of the chronically depressed rent provision of the Residential Rent Regulation Act, 1986.
- Projected rental housing requirements to 1996, by unit rent level for Ontario Ministry of Housing.
- Analysis of the effects of the Canadian Home Ownership Stimulation Program on housing starts for Canada Mortgage and Housing Corporation.
- Energy Efficiency of New Housing (with Peat, Marwick and Partners and Scanada Consultants Limited) for Canada Mortgage and Housing Corporation.
- A Model of Supply and Demand in the Market for Housing for the Ontario Ministry of Housing.

- Several publications and presentations shown in the Academic Profile (see below).

Other Areas:

Papers and Research Projects

- Economic analysis of the market impact of the merger of two Canadian trucking companies in the context of the Competition Act.
- Assisted a Joint Task Force of the Ontario Ministries of Social Services and Health to develop a cost project model of alternative long term health care delivery systems.
- Study of Tax Incentives for Film and Television (joint project with Dr. E. Slack) for the Canadian Film and Television Association.
- Economic Analysis of Tax Incentives for the Film Industry (joint project with Dr. E. Slack) for the Department of Communications.
- Economic Impact of Cultural Institutions for Ontario Association of Art Galleries with the Ontario Federation of Symphony Orchestras and the Toronto Theatre Alliance.
- Economic Impact of Art Galleries' Expenditures on their Local Communities for the Ontario Association of Art Galleries.
- Developed a case study of the potash pro-rationing scheme invoked by the Saskatchewan government for the Faculty of Management Studies, Univ. of Toronto.
- Analysis of Regional Municipality of Niagara financial information for the Niagara Region Review Commission.
- Analysis of Ottawa/Carleton regional government's financial information, and comparison with other regional governments, using the MARS database (with Dr. E. Slack).
- A Dynamic Simulation Model of the North York Secondary School System for Planning for Declining Enrolment for the Ontario Institute for Studies in Education, Department of Educational Planning (with Dr. S. Padro).
- Development of an extension to the Limits to Growth World III Model incorporating commodity prices, technology, disaggregated regions and energy resources into the model.
- Development of a computer program for solving the Dynamic Transportation Problem (with Professors Sethi and Bookbinder at the Faculty of Management Studies, University of Toronto).

PRESENTATIONS

- MEARIE Training Program, Regulatory Specialist Certificate Course, (2011 – 2014)
- “Innovations in Rate Design”, CAMPUT Training Session, Annually 2010-2013
- “Cost of Service Filing Requirements” (2010) 2nd Annual Applications Training for Electricity Distributors, Society of Ontario Adjudicators and Regulators in cooperation with the Ontario Energy Board

- “Green Energy Act” (2010) 2nd Annual Applications Training for Electricity Distributors, Society of Ontario Adjudicators and Regulators in cooperation with Ontario Energy Board
- “Rate Design”, CAMPUT Training Session, Annually 2009- 2013
- “How To Build Transmission and Distribution to Enable FiT: The Role of Distributors”, EUCI Conference on Feed in Tariffs, Toronto, Sept. 2009
- “Distributor Mergers and Acquisitions: Potential Savings”, 2007 Electricity Distributors Ass
- “Beyond Borders” Regulating the Transition to Competition in Energy Markets (with Fred Hassan), EnerCom Conference March 2006.
- “Low-Income Energy Plan for Peterborough City & County”, 2006 LIEN-AHAC Conference
- “The “Deregulated Retail Energy Sector in Ontario”, Toronto Association of Business Economists, Oct. 2003.
- “Other Approaches to Rate Regulation”, CAMPUT Annual Meeting, Sept. 2003.
- “Price Projection: Will the Rate Freeze be Revenue Neutral?” at Canadian Institute Conf., The Impact of Ontario’s New Electricity Market on Large Power Consumers Jan. 2003.
- “Managing Energy Price Risk: Impact of Market & Regulatory Developments on Price Risk Management”, Canadian institute Conference, Toronto, October 21, 2002.
- “Location Based Marginal Pricing: Will it Happen?” Ontario Energy Contracts, Insight Conference, Toronto, October 1, 2002.
- “The Evolution of the North American Energy Market” Canadian Gas Association Executive Conference, Vancouver, June 2002.
- “Alternate Dispute Resolution: Can Everyone Win?” Canadian Gas Association Breakfast, Whistler, British Columbia, May 7, 2002.
- “Incentive Regulation and Commodity Competition Impacts on Quality of Service & Rates”, CAMPUT Regulatory Educational Conference, Whistler, BC, May 7, 2002.
- “Energy Deregulation Developments and Impacts on the HVACR Industry”, HRAI’s 33rd Annual Meeting, August 23-25, 2001 Huntsville, Ontario.
- “Natural Gas Delivery Regulation in Canada”, HRAC Conference on Natural Gas in Nova Scotia, Halifax, Nova Scotia, August 25, 1999.
- “Licensing as a Regulatory Approach” Thirteenth Annual CAMPUT Regulatory Educational Conference, Saint John, New Brunswick, May 4, 1999.
- “The Impact of Restructuring Electricity Markets on Customers”, West Kootenay Power 1998 Annual Conference, The Dawn of Customer Choice, Kelowna, B.C., Dec. 2, 1998.
- “Gaining Access to the Retail Customer”, *Electricity Competition in Ontario, New Rule, New Opportunities, New Players* (Canadian Institute Conference), Toronto, Oct. 1998.
- “The Future: Mega-BTU Inc.?” (Plenary session) Twelfth Annual CAMPUT Regulatory Educational Conference, Banff, Alberta, April 27, 1998.
- “Protecting Low Income Consumers’ Access: Lessons Learned From Other Countries,” Twelfth Annual Energy Affordability Conference, National Consumers Law Center, Washington, D.C, February 26-27, 1998.
- “Competition: What happens downstream of the meter?” (Plenary) Eleventh Annual CAMPUT Regulatory Educ. Conference, Whistler, B.C., May 6, 1997.

- "Brokers, Marketers and the Public Interest" Eleventh Annual CAMPUT Regulatory Educational Conference, Whistler, B.C., May 6, 1997.
- "Separation of Gas Supply, Merchant Functions & Other Alternatives," Tenth Annual CAMPUT Regulatory Educ. Conf., Niagara-on-the Lake, May 1, 1996.
- "The Impact of Deregulation on the Public Interest," Tenth Annual CAMPUT Regulatory Educational Conference, Niagara-on-the Lake, April 30, 1996.
- "Marketing to Low and Moderate Income Consumers in the New Competitive Market: Lessons Learned From Other Industries," Tenth Annual Energy Affordability Conference, National Consumers Law Center, Washington, D.C, February 22, 1996.
- "Where Should We be Going?" OEB Ten Year Market Review Workshop, Jan. 31, 1996.
- "Restructuring the Electrical Power Industry in Ontario" for the Board of Directors of Ontario Hydro on behalf of the Power Workers' Union, August, 1995.
- "A New Vision for Ontario's Electric Demand/Supply Future" panel presentation, Opening Plenary Session of the Canadian Independent Power Conference, Toronto, Dec. 1993.
- "Trends in Rental Housing Affordability by Income Level in Ontario" presented at the 1992 meetings of the Canadian Economics Assoc., Charlottetown, PEI.
- "An Evaluation of Rent Regulation as an Instrument for Meeting the Housing Needs of Renters in Ontario," presented to the Ontario Standing Committee on General Government, August, 1991.
- with S.W. Hamilton (Sept 1990) "Housing and the Regulatory Environment", a paper presented at the Housing Young Families Affordability Symposium, (Vancouver: Canadian Housing and Renewal Association/Canada Mortgage and Housing Corp.)
- "New Telecommunications Technologies: Who Pays? Who Benefits?" presented at the 1990 (June) meetings of the Canadian Economics Assoc., Victoria, B.C.
- with W.T. Stanbury, (1989) "Rent Controls as a Prisoner of War Game", Canadian Real Estate Research Bureau, Faculty of Commerce and Business Administration, University of British Columbia, #89-ULE-019.
- "The Implications of Rent Regulation for Housing Market Models" presented at 1989 (June) meetings of the Canadian Economics Association, Quebec City.
- "Price Caps - An Alternative to Rate of Return Regulation?" at the Canadian Association of Members of Public Utility Tribunals/Centre for the Study of Regulated Industries, Annual Regulatory Studies Training Programme, McGill University, May 14-18, 1989.
- "Living with Rent Regulation in Ontario" at the 35th North American meetings of the Regional Sciences Association, Toronto, November 1988.
- "A Survey of the Research of the Thom Commission," at *Rent Control: The International Experience*, John Deutsch Institute Roundtable, Queen's University, September, 1987.
- Invited address on "Forecasting the Regulatory Environment of Financial Institutions" sponsored by the University of Michigan - Flint as the 1985 paper for their annual *Lectures on the American Economy and the Business Community* series.
- "Collapsing Barriers Between Banking and Other Financial Institutions" at the 1984 Canadian MBA Conference, McMaster University.

- The economic impact of cultural activities for conferences of National Museums of Canada, Canadian Conference on Heritage Resources, Canadian Museums Association, Ontario Association of Art Galleries, and Ontario Federation of Symphony Orchestras.

PUBLICATIONS

Refereed Books and Monographs:

- with W.T. Stanbury (February 1990) *Rent Regulation: The Ontario Experience*, (Vancouver: The Canadian Real Estate Research Bureau).
- with W.T. Stanbury (January 1990) *The Housing Crisis: The Effects of Local Government Regulation*, (Vancouver: The Laurier Institute).
- with T. Courchene and L. Schwartz (October 1986) *Ontario's Proposals for the Canadian Securities Industry*, Observation No. 29, (Toronto: C.D. Howe Inst.).
- (1983) *Price Competition in the Canadian Securities Industry: A Test Case of Deregulation*, (Toronto: Ontario Economic Council).
- with G.F. Mathewson (1982) *Information Entry and Regulation in Markets for Life Insurance - Part II Overview and Policy Implications*, (Toronto: Ontario Economic Council).

Refereed Articles:

- with W.T. Stanbury (1990) "Landlords as Economic Prisoners of War", *Canadian Public Policy*, XVI no.4.
- with G.D. Quirin and S.P. Sethi (1977) "Market Feedbacks and the Limits to Growth", *INFOR*, Vol. 15, No. 1.

Other Publications:

- (1992) *Technology, Competition and Cross-subsidization in the Canadian Telecommunications Industry*, (Ottawa: Public Interest Advocacy Centre).
- (April 1990) *Paying for What You Need: Technological Advances and Competition in Telecommunications*, (Ottawa: Public Interest Advocacy Centre).
- with Andrew Roman and Robert Horwood, (1989) *Insurance Retailing by Financial Institutions in Canada*, (Ottawa: Public Interest Research Centre).
- with Douglas G. Hartle (1983) "The TAX-2 Model and Results" in *A Separate Personal Income Tax for Ontario: An Economic Analysis*, Special Research Report, (Toronto: Ontario Economic Council).
- (1982) "Commentary" in *Inflation and the Taxation of Personal Investment Income: An Analysis and Evaluation of the Canadian 1982 Reform Proposals* (edit. D.W. Conklin), Special Research Report (Toronto: Ontario Economic Council).

TEACHING

1989	Economics of Housing, Scarborough College, University of Toronto
1979 – 1985	Engineering Economy, Faculty of Engineering, University of Toronto
1982 – 1985	Computerized Business Systems (B.A. Program), and Management Information Systems (M.B.A.), Canadian School of Management
1979	Introductory Economics at St. George Campus, University of Toronto
1977 – 1979	Economic Principles at Erindale College, University of Toronto
1980 – 1985	Scuba diving instruction for Basic Diver, Sport Diver, Assistant Instructor and Instructor courses (National Association of Underwater Instructors).

RESEARCH MANAGEMENT

1983 – 1987	<ul style="list-style-type: none">• Research Director: Commission of Inquiry Into Residential Tenancies.• Directing a staff of four in house researchers on various background studies on Ontario's housing market and the literature related to rent regulation. Managed thirty external projects on topics related to the housing market and rent regulation.
1978 – 1980	<ul style="list-style-type: none">• Research Officer: Ontario Economic Council.• Research was conducted in the areas of regulation of the securities industry, mineral resource taxation policy, and Federal Provincial energy policy.• Other duties included managing ten external research contracts on topics in regulation and directing the work of research assistants.

OTHER ACTIVITIES

- Organizing Committee for the Concert for Inclusion in support of ParaSport Ontario
- Chairman of the Board of Directors of the Ontario Energy Marketers Association (formerly the Direct Purchase Industry Committee) and Executive Director of the Association.
- Invited participant in the Ontario Energy Board's External Advisory Committee.
- Panelist for "Administrative Tribunals and ADR", Osgoode Hall Law School, Professional Development Program, Continuing Legal Education, April 1997.
- Participation on behalf of OCAP in consultative processes related to direct purchase and integrated resource planning in the Ontario natural gas industry.
- Former Member of the Board of Directors of East Toronto Community Legal Services.
- Former Chairman of the Board of Directors of the Festival of Canadian Theatre.
- Articles in the editorial section of the Financial Times of Canada on policies for reforming Ontario's system of rent regulation (June 1990) and federal proposals regarding bank directorships (February 1991).
- Numerous appearances on CBC radio and television commenting on energy industry issues, competition, regulation and mergers in the Canadian economy.

- Refereed articles and research studies for *Canadian Public Policy*, *Queen's Quarterly* and Consumer and Corporate Affairs, Canada.
- Several organizations have been assisted in developing their research agendas, writing submissions to government on economic issue, or in other advisory capacities. Clients include the Public Interest Research Centre (topics include airline deregulation, Via Rail, telephone solicitation, Bell Canada's rate structure, frequent flyer programs, price cap regulation, and home equity conversion), Ontario Association of Art Galleries (arts funding and economic impact), Public Affairs Management, Inc., City of Toronto, Parks and Recreation Department, and Goldfarb Consultants.

CLIENTS

Private Sector Companies

Alfred Bunting & Co.	Auto Haulaway Inc.
BC Gas Utilities Limited	BC Rail
Buttcon Ltd.	Canavest House Ltd.
Canadian National Investments	Entergrus (Chatham-Kent Energy)
Comdisco Canada Inc.	Coral Energy
Devon Canada	Direct Energy
EnCana	ENERconnect
Enbridge Gas Distribution	EnCana Corporation
Enron Trade and Capital Canada	Financial Times of Canada
Fine Line Communications Ltd.	FortisBC
Fuji Electric (Tokyo)	Goldfarb Consultants
Great West Life Assurance Co.	Highmark Properties
Hydro One Networks Inc.	Hydro Québec
Insurance Corp. of British Columbia	McLeod Young Weir
New Brunswick Power (Disco)	Ontario Hydro Services
Ontario Power Generation	Shulman Communications Inc.
Sithe Canada	Star Produce
Terasen Gas	The Morassutti Group
Union Gas Limited	Wirebury Connections Inc.
Over 30 Ontario electricity distributors	

Industry and Other Associations

Association for Furthering Ontario's Rental Development
 Australian Merchant Bankers' Association
 Canadian Association of Members of Public Utilities Tribunals (CAMPUT)
 Canadian Business Telecommunications Alliance
 Canadian Film and Television Association
 Canadian Independent Telephone Association
 Canadian Museums Association
 Cornerstone Hydro Electric Concepts
 Electricity Distributors Association

Manitoba Keewatinowi Okimakanak
Ontario Association of Art Galleries
Ontario Energy Association
Ontario Federation of Symphony Orchestras
Power Workers' Union (CUPE 1000)
Toronto Theatre Alliance

Consumers' Associations

Alberta Council on Aging
Alert on Welfare
British Columbia Old Age Pensioners' Association
Canadian Pensioners Concerned
(Nova Scotia Division)
Consumers Association Of Canada
(National)
(Manitoba Branch)
(Alberta Branch)
(Northwest Territories Branch)
Consumers Fight Back Association
Council of Senior Citizens' Organizations
Co-operative Housing Association of Ontario
Federated Anti-Poverty Groups of British Columbia
Action réseau consommateurs (formerly La Fédération
Nationale des Associations de Consommateurs du Québec)
Manitoba Society for Seniors
The National Anti-Poverty Organization
Nova Scotia League for Equal Opportunities
Ontario Coalition Against Poverty
Option Consommateurs
PEI Council for the Disabled
PEI Senior Citizens Federation
People on Welfare for Equal Rights
Public Interest Research Centre
Rural Dignity of Canada
Rural Dignity, PEI Chapter
Senior Citizen' Association
Social Action Commission

Counsel for Consumers' Associations

British Columbia Public Interest Advocacy Centre
Legal Aid Manitoba, Public Interest Law Centre

Newfoundland Consumer Advocate
Public Interest Advocacy Centre (Ottawa)

Government

Federal

Canada Mortgage and Housing Corporation
Canadian Conference on Heritage Resources
Consumer and Corporate Affairs (Canada)
Department of Communications (Canada)
Director of Investigation and Research, Combines Investigation Act
St. Lawrence Seaway Authority

Provincial

Alberta Department of Energy
Commission of Inquiry into Residential Tenancies
New Brunswick, Department of Energy
Niagara Region Review Commission
Ontario Economic Council
Ontario Energy Board
Ontario Institute for Studies in Education, Department of Educational Planning
Ontario Ministry of Community and Social Services
Ontario Ministry of Health
Ontario Ministry of Housing (Corporate Policy and Planning; Rent Review Policy, Housing Field Operations)
Ontario Securities Commission
Ontario Task Force on the Investment of Public Sector Pension Funds
Ottawa/Carleton Region Review Commission
University of Toronto

Other

City of Calgary Electrical System
City of Peterborough
City of Toronto, (Telecom; Housing; Parks and Recreation)
Halifax Regional Municipality
Manitoba NDP Caucus
Office of Fair Trading (United Kingdom)
St. Francis Xavier University
Toronto Harbour Commissioners
Four municipally operated public utility telephone system

FORM A

Proceeding: EB-2014-0289

ACKNOWLEDGMENT OF EXPERT'S DUTY

1. My name is John D. Todd (name). I live at Toronto (city), in the Ontario (province/state) of Canada.
2. I have been engaged by or on behalf of Greenfield South Power Corp. (name of party/parties) to provide evidence in relation to the above-noted proceeding before the Ontario Energy Board.
3. I acknowledge that it is my duty to provide evidence in relation to this proceeding as follows:
 - (a) to provide opinion evidence that is fair, objective and non-partisan;
 - (b) to provide opinion evidence that is related only to matters that are within my area of expertise; and
 - (c) to provide such additional assistance as the Board may reasonably require, to determine a matter in issue.
4. I acknowledge that the duty referred to above prevails over any obligation which I may owe to any party by whom or on whose behalf I am engaged.

Date 4 Nov. 2014

John D. Todd
Signature