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March 21, 2016

VIA E-MAIL

Ms. Kirsten Walli
Board Secretary
Ontario Energy Board
P.O. Box 2319
2300 Yonge St.
Toronto, ON
M4P 1E4

Dear Ms. Walli:

Re: EB-2016-0004 - Ontario Energy Board Generic Proceeding
Natural Gas Community Expansion
Evidence of Vulnerable Energy Consumers Coalition (VECC)

Please find attached the Evidence of George Hariton and Tom Ladanyi filed on behalf of the Vulnerable Energy Consumers Coalition (VECC) in the above noted matter. The evidence reviews the evolution of the OEB's current natural gas system expansion policy, then describes the treatment of issues of uneconomic expansion and service in telecommunication. The evidence also discusses the possible application of a similar approach to the issue of natural gas community expansion. As it may be premature in this proceeding to contend for a new framework of subsidies to enable natural gas expansion, the purpose of the evidence is to provide information and a discussion of relevant considerations that may assist the Board in fashioning any change to the current policy that is thought desirable or required. Specifically, the evidence is directed to addressing concerns arising from the determination of Issues 2, 3, 6, 8 and 9 of the Issues List set out in Procedural Order 2 in this proceeding.

Please note that one of our witnesses is unavailable on May 5 and 6 of the Board's scheduled hearing days. We hope that their testimony might be accommodated on May 9, 10, and 11.

Yours truly,

Michael Janigan
Special Counsel
Regulatory and Consumer Affairs
Public Interest Advocacy Centre

1204-ONE Nicholas Street, Ottawa, ON K1N 7B7 Tel: 613-562-4002 Fax: 613-562-0007 piac@piac.ca
Michael Janigan – Direct: 31 Hillsdale Avenue E, Toronto, ON M4S 1T4 Tel: 416-840-3907 mjanigan@piac.ca

Natural Gas System Expansion and Subsidies in Telecommunications

Evidence of George Hariton and Tom Ladanyi

Prepared for the Vulnerable Energy Consumers Coalition in EB-2016-0004 -Application under the Ontario Energy Board's own motion to consider potential alternative approaches to recover costs of expanding natural gas service to communities that are not currently served

March 21, 2016

Table of Contents

EXECUTIVE SUMMARY

This is the third time in its history that the Ontario Energy Board (" OEB"," the Board") is reviewing its policies for expanding natural gas service to communities that do not currently have natural gas service by using a subsidy collected from current customers. The first review resulted in the EBO134 *Report of the Board* [1] issued June 1, 1987. The report introduced the Three Stage Test which is largely still in effect. The second review resulted in the EBO 188 *Final Report of the Board*[2] issued in 1998. In it the Board standardized Stage One economic feasibility parameters and introduced the Portfolio concept. The matters that were considered in those two proceedings were similar to the issues now before the Board in EB-2016-0004. There was nothing special or theoretically rigorous about the EBO 188 and the original EBO 134 criteria. They were developed in consultation with interested parties as a compromise subsidy for system expansion that would not place an undue burden on existing customers. In the EB-2016-0004 proceeding, a different compromise of what is, or is not, an undue burden may be reached.

We have been requested to consider the issues in this proceeding concerning the use of subsidy funds to accomplish expansion of natural gas service, These issues include the question of how a subsidy collected from one utility could be used to expand service by another utility? To do so, we have reviewed the decisions and practice of the Canadian Radio-television and Telecommunications Commission (CRTC or Commission) that faced similar issues in the past.Our evidence presents a summary of how that regulator dealt with them in the hope that our evidence will be of assistance to the Board in answering the questions set out in the approved Issues List. Our evidence first presents a summary of the Board's experience with EBO 134 and EBO 188. This is followed by a discussion of system expansion policies in the telecommunication industry, and the jurisdiction of the OEB to potentially implement such policies if thought desirable. Finally, this evidence provides a summary of the key practical and policy considerations to be examined if implementation of a similar funding model is considered.

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[1] EBO 134 In the Matter of a Review by the Ontario Energy Board of the Expansion of the Natural Gas System in Ontario *Report of the Board* June 1, 1987

[2] EBO 188, *In the Matter of a hearing to inquire into, hear and determine certain matters relating to natural gas system expansion for The Consumers' Gas Company Ltd., Union Gas Limited and Centra Gas Ontario Inc. Final Reoort of the Board*, June 30, 1998

INTRODUCTION

Since the start of utility regulation, regulatory boards and commissions have struggled with the problem of how to pay for the extension of utility services to new customers without placing an undue burden on existing customers. The following two quotes from classic texts on regulation of utilities illustrate the point.

> *"The provision and pricing of services to any person(s) should not impose unwarranted economic costs on other person(s)."* [3]

> *When companies, because of prospective costs and revenues, are unwilling to extend service to new market areas voluntarily, commissions can often make such extensions attractive. A company may be permitted to charge higher rates in the new market than are charged in the old market. In this way, the new customers will pay the costs of extending the service. A company may be permitted to raise rates in the old market, thus charging more for the same service than in the new market*[4i]*. The old customers will thereby subsidize part of the new service. Finally a company may be permitted to raise rates in both markets, so that the new and old customers will pay the same rates. Both groups will pay the costs of extending the service. Commissions generally prefer either the first or second alternative, and there are many instances where each has been employed. Suburban bus rates commonly are higher than downtown city rates; city telephone service is usually more expensive, relative to cost, than rural service"* [5]

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[3] *Principles of Public Utility Rates*, James C. Bonbright, Albert L. Danielsen, David R. Kamerschen, Public Utilities Reports Inc., Arlington, Virginia; 1988; page 568

[4] Alternatively, if a company has excess earnings, the commission could require the extension of service rather than order rate reductions. The results are the same.

[5] *The Regulation of Public Utilities*, Charles F. Phillips, Public Utilities Reports Inc; Arlington, Virginia; 1993; pages 567-568.

OEB EXPERIENCE WITH EBO 134 and EBO 188

EBO 134

In 1985, Consumers Gas (now Enbridge), filed an application for OEB approval to extend service to communities in the Ottawa Valley: Chalk River, Deep River, Rolph, Buchanan, Wylie and McKay, and the County of Renfrew. None of the projects met the company's feasibility test that required that the revenues from a project meet the utility's rate of return in the fifth year of service. Consumers Gas argued that public interest would nevertheless be served if the Board were to approve these projects.

It should be noted that in the early 1980's the Federal Government had two programs that facilitated natural gas system expansion to new communities: the Distribution System Expansion Program (DSEP) and the Canada Oil Substitution Program (COSP) designed to reduce reliance on expensive imported oil. DSEP provided assistance to gas utilities through contributions in aid of construction (CIAC) for expansion to new communities. COSP provided grants to homeowners for conversion of home heating from oil to natural gas (or electricity). The programs were phased out by 1985 and were therefore not available to Consumers Gas to assist with the costs of its Ottawa Valley expansion projects.

In its decision, issued in late 1986, the Board denied the application by Consumers Gas, noting that the impact on the public interest was not adequately presented in evidence and that:

> *"certain important questions concerning system expansion to smaller communities should be considered:*
>
> - *With DSEP discontinued, what are the means whereby marginally uneconomic areas of Ontario are to be served, if at all;*
> - *What is the role of the Board in the light of the removal of DSEP and to what extent should it be encouraging gas service to marginally uneconomic areas;*
> - *With Ontario utilities facing mature markets, is expansion into uneconomic areas appropriate;*

- *Should the shareholders or customers of utilities subsidize uneconomic expansion into smaller communities;*

- *Are there lower limits of return that should be permitted on a project by project basis? Are size of project or amount of subsidy factors that should be considered in assessing a project;*

- *Have the changing circumstances with respect to energy resulted in the test of public interest being changed;*

- *Are the current methods for assessing the economic feasibility of projects appropriate and what changes, if any, should be made;*

- *Should the economics of system expansion be considered on the basis of marginal/incremental costs or on a fully allocated basis?"* [6]

It indicated that a special hearing would be held to consider these issues. In January 1987 the Board invited *"any party interested in system expansion to participate"* and received 129 responses. These included gas utilities, customer and public interest groups, government ministries, politicians, municipalities and private individuals. Following release of a Board Staff discussion paper, the Board received written submissions from 25 of the interested parties and held a Technical Conference in April 1987. In its report, issued in June 1987, the Board presented its findings. The following ones dealing with the role of the Board and public interest are particularly significant to the issues currently before the Board in EB-2016-0004.

> *The Board finds that it has jurisdiction to review all matters relating to the production, distribution, transmission and storage of natural gas. Mr. Justice Keith in reviewing the history and the origins of the OEB Act, stated:*
>
> > *In my review the statute makes it crystal clear that all matters relating to or incidental to the matters relating to or incidental to the production, distribution,*

[6] EBO 134 *Report of the Board*, paragraph 2.13

> *transmission or storage of natural gas...are under the exclusive jurisdiction of the Ontario Energy Board...*
>
> *These are all matters that are to be considered in the light of general public interest and not local or parochial interests. The words "in the public interest "... which I have quoted would seem to leave no room for doubt that it is the broad public interest that must be served. (Union Gas Limited vs. Township of Dawn. (1977) 76 D.L.R. 613)*

The Board reiterates that the concept of public interest is dynamic and it must change according to the circumstances. The Board considers that the relevant criteria from those listed above, and others depending on the circumstances, should be addressed as fully as possible so that the Board has complete information on which to base its determination as to whether or not a project is in the public interest.

There can be no firm criteria for determining the public interest and the Board will not attempt to define these criteria closely. The weighting the Board attaches to each criterion considered can also change with the circumstances of a specific application.

When considering the public interest in prior proceedings the Board has been satisfied if the welfare of the public is enhanced without imposing an undue burden on any individual, group or class. The Board will continue to be guided by this general principle in determining the extent to which gas service should be extended into other areas of the province.

The Board considers that system expansion should not be unlimited and that it is required to continue to determine whether the expansion of gas service is in public interest.

The Board has concerns with the concept of "economic feasibility" as it has been used in these proceedings. ...The Board considers that regardless of the "economic feasibility" test used to evaluate a project, it has not been, nor will it be, the sole criterion examined. Even though "economic feasibility" is an important factor, it may be given more weight in some situations, and less in others such as safety or security of supply projects.

Any application to the Board should include evidence on all public interest criteria considered relevant by the participants. Any data that can be quantified in a meaningful fashion should be presented that way with assumptions clearly stated.

The Board recognizes that the views of a local community may differ from those of an industrial customer or of a utility. In reaching its decision, the Board attempts to accommodate differing interests in its assessment of the public interest. The greater the number of interests that are represented at a hearing, the more confidence the Board can have in its judgment regarding the public interest.

The Board therefore encourages wide participation in hearings regarding these matters"[7]

The Board reviewed the economic feasibility test criteria used by the three utilities to assess the system expansion projects and found that each utility used different test criteria. The utilities and Board Staff presented evidence on alternative tests. The Board found that the Three Stage Test proposed by Union Gas was preferable to the currently used tests and all other alternatives, and that incremental costs and revenues should be used in a DCF analysis.

"The Board finds that incremental costs should be used in evaluating the feasibility of system expansion.

The Board will continue to assess the adequacy of the DCF analysis and any other tests used for project evaluation at the time of a utility's rate case hearing.

The Board finds that Union's three-stage test has considerable merit. The Board requires each utility to develop a three-stage process as outlined below to aid the Board in its determination of the public interest.

The first stage is a test based on a DCF analysis.

The second stage should be designed to quantify other public interest factors not considered at stage one. All quantifiable other public interest information as to costs and benefits should be provided at this stage.

[7] EBO 134 *Report of the Board*, June 1, 1987, paragraphs 5.13 to 5.21

The third stage should take into account all other relevant public interest factors plus the results from stage one and stage two.

The Board continues to hold the opinion that it is appropriate for existing customers to subsidize, through higher rates, financially non-sustaining extensions that are in the overall public interest if the subsidy does not cause an undue burden on any individual, group or class" [8]

As can be seen from the above, most of the issues discussed and dealt with 29 years ago in EBO 134 are still relevant today.

EBO 188

In the years immediately following the EBO 134 Report of the Board, utilities filed several applications for OEB approval of system expansion projects. These were supported by the Three Stage Test analysis. It became apparent that each utility was using a different method for its DCF analysis of costs and benefits for the first stage test, which looked at the impact of the expansion on existing customers. The Board dealt with each case on the basis of evidence presented, sometimes issuing decisions that were not consistent with other decisions. This did not cause any serious problems until 1994 when Union Gas and Consumers Gas filed competing applications for system expansion into the communities of Dundalk, Flesherton and Markdale. The Board was presented with conflicting evidence about which of the two utilities could more feasibly provide service to the three communities. Unable to reach a decision, the Board ordered the two utilities to reach a negotiated settlement, which they did by dividing the territory covered by the three communities between them.

Immediately following this, in July 1995, the Board issued a notice that it would proceed with EBO 188, a review of the system expansion policies of gas utilities. As in EBO 134, utilities, customer and public interest groups and municipalities took part in the review.

[8] EBO 134 *Report of the Board*, June.1, 1987, paragraphs 6.70 to 6.75.

Through interrogatories and the ADR settlement process it became apparent that there was a divergence of views. The Board then asked the parties to submit argument on the following issues:

> *1.1 Should financial feasibility be the only determinant for expansion or should it include, apart from security of supply and safety:*
>
> *(1) an obligation to serve in areas where existing service is available;*
>
> *(2) externalities;*
>
> *If externalities are to be included, what specific externalities, i.e. economic, social, environmental, should be considered? What tests should be applied and in what sequence?*
>
> *1.2 Given the answer to 1.1, what level of financial subsidy, if any, should be applied to system expansion;*
>
> *1.3 Should a portfolio of projects be utilized or should the utilities account for expansion on a project-by-project basis? How should the portfolio be defined?*[9]

As can be seen from the above, the issues were similar to the issues currently being considered in EB-2016-0004. Following submissions, the Board issued its Interim Report in August 1996 and directed the parties to develop guidelines and policies consistent with the findings of the Interim Report by means of another ADR settlement process, which took place in early 1997. There was not complete agreement among the parties which was communicated to the Board through two opposing reports: the ADR Agreement and the Dissent Document. After considering both submissions the Board issued its Final Report in January 1998.

In its report, the Board approved two new concepts proposed in the ADR Agreement for tracking the performance of system expansion projects: the Investment Portfolio and the Rolling Project Portfolio.

The Investment Portfolio would group into one portfolio all proposed new distribution customer

[9] EBO188 *Final Report of the Board*, January 1998, paragraph 1.16

attachments and facilities for a particular test year. The ADR Agreement proposed that the Investment Portfolio should achieve a Net Present Value of zero or greater and a Profitability Index (PI) of 1.0. PI is the sum of the Present Value (PV) of Operating Cash Flow plus the PV of the Capital Cost Allowance (CCA) Tax Shield divided by the PV of Capital.[10] In its report the Board introduced a safety margin increasing the PI to 1.10 in order to *"minimize the forecast risks and hence more likely achieve the desired results of no undue rate impacts."* [11]

The Rolling Project Portfolio, as proposed in the ADR Agreement would group into one portfolio all distribution expansion projects for the past 12 months. The cumulative result of project-specific discounted cash flow analyses from the past 12 months would be calculated monthly. The costs and revenues associated with serving customers on existing mains would not be included. The portfolio would maintain an NPV of zero or greater. This was accepted by the Board.

For DCF analysis the ADR Agreement proposed a 10 year customer attachment horizon, a 40 year customer revenue horizon for all customers except for 20 years for large volume customers. The Board accepted these and also found that "that all projects must achieve a minimum threshold P.I. of 0.8 for inclusion in a utility's Rolling Project Portfolio." Customer contributions may be required to bring a project PI up to 0.8.

In other words, a marginal project attaching residential customers would not reach a PI of 0.8 until the end of the fortieth year. In the first part of the 40 year period, the revenues collected from new customers would be lower than the costs of serving them. This would produce an annual revenue deficiency which would put an upward pressure on rates. Assuming that the OEB approved annual or periodic rate increases, existing customers would subsidise new customers through higher rates during this period. Some time before half way through the 40 years a crossover would be reached and the revenues from new customers would exceed the costs, creating an annual revenue sufficiency putting a downward pressure on rates. From then on the new customers would subsidise existing customers. For a marginal project, the present value of the revenues collected from new customers over the 40 years divided by the costs to serve those

[10] EBO188, Final Report of the Board,Appendix B
[11] EBO 188, *Final Report of the Board*, paragraph 2.3.10

customers would be 0.8. To *minimize the forecast risks and hence more likely achieve the desired results of no undue rate impacts* the Board set the PI of 1.1 as the Investment Portfolio target. In effect each year the Investment Portfolio could include some marginal projects with a PI of 0.8 as long as there are enough projects with higher PI in order that the total equal 1.1or greater. However, at the PI of 1.1 existing customers would still need to subsidize new customers in the early years when the portfolio of new system expansion projects produces an annual revenue deficiency. It is clear from the EBO 188 report that the Board found that some level of cross-subsidy from existing customers to new system expansion customers over a period of decades was not undue.

Moving beyond EBO 134 and EBO 188

The evolution of the Board's policies regarding system expansion over the last 30 years since EBO 134 are a reflection of its struggle to define what is an undue level of cross-subsidy between current and prospective customers. There was nothing special or theoretically rigorous about the EBO 188 and the original EBO 134 criteria. They were developed in consultation with interested parties as a compromise subsidy for system expansion that would not place an undue burden on existing customers while extending gas service to the greatest number of new customers. EBO 134 and EBO 188 reports were issued at the time when gas utilities were filing annual cost of service applications and the annual revenue deficiency caused by marginal system expansion projects could be recovered from ratepayers on an annual forecast basis. The introduction of incentive regulation with cost of service rebasing every five years created a situation where the annual revenue deficiency caused by marginal system expansion projects could only be recovered from ratepayers at the time of re-basing unless there was a provision for a Y-factor. A review of EBO 188 guidelines should take into account the impact of incentive regulation and the best way to deal with it.

The upward pressure on rates, caused by marginal system expansion projects if approved by the OEB, results in larger rate increases than there would be without these projects. These rate increases are a cross-subsidy from existing to new customers. The Board in its EBO 188 report

does not set a precise limit on the size of these annual rate impacts. The Board in this review might consider setting such a limit.

If existing customers are to provide a subsidy, utilities with a large existing customer base would have a competitive advantage over smaller utilities or new entrants in extending gas service to new communities. The Board in its review could consider if a more level playing field would be in the public interest. One way of levelling the playing field could be a sharing or pooling of subsidy funds. In that regard the experience of the telecommunications industry, where this has been used for some time, may be of assistance to the Board. We provide a review of the subsidies in the telecommunications industry in the following section of our evidence. We believe that a review of the experience of the telecommunications industry would be of assistance to the OEB in its considerations in the present proceeding.

SUBSIDIES IN TELECOMMUNICATIONS

Summary

Telecommunications policy in Canada has traditionally pursued the objective of providing universal access to basic telephony services, across Canada, at affordable prices. This was considered to be important for both economic and social reasons.

Economically, telecommunications is a key infrastructure, essential to all sectors, from services and manufacturing to agriculture and natural resources. Socially, being connected to the telecommunications network allows ordinary Canadians to participate in in the social fabric, ranging from contact with friends and family to educational, health care, governmental, and entertainment activities.

The objective of universal accessibility and affordability has two components. The first, universal accessibility, requires that the network be built out to more and more locations, serving a higher and higher percentage of Canadian households. As well, as the standard of basic service

improved over time, the network has had to be upgraded everywhere[12]. This was a particular challenge in high cost serving areas, where the financially viability of projects was in doubt or non-existent.

The second component was affordability. The network not only had to reach customer premises; the prices had to be low enough that households could afford to subscribe. Increasing the number of people connected to the network had two benefits. First, it led to some economies of scale, and hence lower costs for all. Secondly, it increased the number of people one could contact from one's own premises, and hence added value to everybody's service[13].

Correspondingly, two subsidy regimes evolved over time. The first helped expand the network by having existing customers pay for the capital expenditures involved. Projects were approved by the regulator, first in a series of Construction Program Reviews and now Service Improvement Plans. Under rate of return regulation, the costs were added to the service provider's revenue requirement and recovered by higher rates paid by the body of that service provider's customers. Under the current price caps regime, the price ceiling for relevant services is adjusted upwards, with the same effect.

Regulators have been careful to provide each service provider with an opportunity to recover the costs of network expansion from its customers, and not its shareholders.

The second subsidy addressed the issue of affordability by keeping rates low for basic telephone service to residential customers. This is an ongoing subsidy. Over time, the definition of basic service has evolved, with more functionality being included (e.g. digital connections, low-speed Internet access) and is currently under review again. The level of prices considered affordable has also been increasing over time, as higher prices in themselves have not led to significant declines in penetration rates (the proportion of households connected to the network). However,

[12] For example, multi-party service was replaced by single-party service. Analogue connections were replaced by digital ones, enabling better quality and new services.

[13] In technical terms, there were externalities both on the supply side (lower unit costs) and on the demand side (higher value per connection).

affordability is still a concern in high cost serving areas, where prices that would recover ongoing capital and operating expenses would be too high[14].

Traditionally, such subsidies were in the form of cross-subsidies from other services. With the advent of competition, such cross-subsidies were no longer sustainable, and the regulator moved to an explicit subsidy. The functioning of this subsidy has changed over time. Currently it consists of a national contribution fund (NCF), funded by a percentage surcharge on all telecommunications revenues in Canada (with the exception of retail Internet services and radio paging). The surcharge for the current year is set at 0.56 per cent of all eligible telecommunications service revenues. This is expected to generate some $114 million for the year[15].

The money is paid to incumbents (i.e. traditional telephone companies):

- with an obligation to serve customers in their operating territories
- in non-forborne locations, i.e. where competition is not intense enough to justify no longer tariffing rates
- in high cost serving areas.

The combination of an obligation to serve, and upward constraints on the prices that can be charged, places a social obligation on incumbents. They are obliged to provide service that may not be financially viable in high cost serving areas. The subsidy is intended to compensate them for this obligation.

This compensation is provided through the national contribution fund. The fund includes transfers between service providers. Its design means that all service providers share the burden, while only incumbents in high cost serving areas collect. By contrast, Service Improvement Plans are wholly funded by the customers of the service provider in question. Thus there is no cross subsidy among service providers. There is an exception for high cost serving areas, where

[14] The present threshold is $30 a month for basic residential service, which includes a limited set of services. Currently, this level is being re-examined.

[15] Proposals to expand the set of basic services eligible for subsidy could increase the size of the fund.

prices are already so high that further increases would make them unaffordable. In such cases, funding for service improvement plans will come from the national contribution fund, funded by customers of all telecommunications providers.

Background

The telecommunications service provision industry has long been characterized by large subsidies among various services. Historically these subsidies were implicit, through charging below-cost prices for the target services and above-cost prices for remaining services. However, as competition spread in telecommunications, implicit cross-subsidies were no longer sustainable. As a result, implicit cross-subsidies were replaced by explicit subsidies.

A major objective for telecommunications services regulation in Canada has long been to provide access to local telephone service at affordable rates to all Canadians, regardless of region. For almost a century, this objective was grounded in common law rather than statute. However, a new *Telecommunications Act* in 1993[16] provided an explicit set of objectives for telecommunications in Canada. S. 7 of the *Act* reads as follows:

> **7.** It is hereby affirmed that telecommunications performs an essential role in the maintenance of Canada's identity and sovereignty and that the Canadian telecommunications policy has as its objectives
>
> - **(a)** to facilitate the orderly development throughout Canada of a telecommunications system that serves to safeguard, enrich and strengthen the social and economic fabric of Canada and its regions;
> - **(b)** to render reliable and affordable telecommunications services of high quality accessible to Canadians in both urban and rural areas in all regions of Canada;
> - **(c)** to enhance the efficiency and competitiveness, at the national and international levels, of Canadian telecommunications;
> - **(d)** to promote the ownership and control of Canadian carriers by Canadians;

[16] *Telecommunications Act* S.C. 1993, c. 38

- **(e)** to promote the use of Canadian transmission facilities for telecommunications within Canada and between Canada and points outside Canada;
- **(f)** to foster increased reliance on market forces for the provision of telecommunications services and to ensure that regulation, where required, is efficient and effective;
- **(g)** to stimulate research and development in Canada in the field of telecommunications and to encourage innovation in the provision of telecommunications services;
- **(h)** to respond to the economic and social requirements of users of telecommunications services; and
- **(i)** to contribute to the protection of the privacy of persons.

The objectives were supplemented by a *Policy Direction* to the Commission issued by the Governor-in-Council pursuant to s. 8 of the *Telecommunications Act*. [17] The *Policy Direction* requires the Commission to rely on market forces, rather than regulation, to the maximum extent possible.

Historic Cross-Subsidies

Regulators traditionally focussed on the objective of reliable and affordable basic services throughout Canada, which they interpreted to mean keeping prices for local telephone service to residences very low. The objective of extending service to rural and remote areas was pursued by keeping rural prices for local services well below urban prices.

The traditional rationale for the emphasis on universally available and affordable basic service was social as well as economic. It was felt that having access to a telephone on one's premises was necessary to fully participate in the life of the community. As well, telephony enabled people to be more productive, communicating with businesses, job hunting, emergency services, and so on.

[17] *Order Issuing a Direction to the CRTC on Implementing the Canadian Telecommunications Policy Objectives*, SOR/2006-355, 14 December 2006

There were also economies of scale, both on the supply side and the demand side. On the supply side, the denser the body of subscribers, e.g. lines per square mile or kilometer, the lower the cost per line, as larger cables could be used and fewer trenches dug. This was especially true in rural areas.

On the demand side, the more people a subscriber could reach using his or her telephone, the more valuable the service became. This was reflected in prices, which varied according to the number of other lines a subscriber in a given location could reach without paying long distance charges. This "value of service" pricing resulted in much lower rates in small towns than in large cities, and yet lower prices in rural areas. This pattern was the opposite of that shown by costs.

As a consequence, extending the telephone network and getting people to subscribe became the main theme of telecommunications policy. In rate case after rate case, the regulator, looked to make up any revenue shortfall by increasing prices on other services.[18]

Low prices to residences for local services were funded from three sources. Far and away the largest was long distance services, which historically were considered a bit of a luxury. Estimates of the size of the subsidy varied, but Bell Canada estimated that long distance revenues exceeded costs by $1.3 billion in 1983, in Ontario and Quebec alone[19]. By 2001, the Commission set the total subsidy requirement for the large incumbents at $920 million[20].

A second cross-subsidy was from business services to local residential services. For many years, prices for local services to businesses were more than twice the prices for residences, although the underlying costs were roughly equal.

A third cross-subsidy, already mentioned, saw the prices for local services significantly higher in urban than in rural areas, even though costs of providing service were much higher in rural areas.

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[18] This situation lasted until increasing competition for a variety of services, starting with long distance voice in 1992, made large cross-subsidies unsustainable. In 1997, the Commission embarked on a multi-year program to better align rates for basic local service with the costs of providing these services. Telecom Decision CRTC 97-9, *Price cap regulation and related issues*, 1 May 1997. This program of "rate rebalancing", as it was called, resulted in significant price increases for local voice services and decreases for long distance voice services

[19] Results of Bell Canada's Five Way Split Study for 1983, cited in Telecom Decision CRTC 85-19, *Interexchange competition and other issues*, 29 August 1985

[20] Telecom Decision CRTC 2000-745, *Changes to the contribution regime*, 30 November 2000, at paragraph 123.

These measures targeted the objective of keeping prices low. As well, the incumbents had ongoing programs to extend and upgrade service in unserved areas, including rural areas. While there was no statutory obligation to provide service, apart from infill, such expansion was encouraged by the regulator.[21] Costs were included in the rate base and recovered routinely by higher rates paid by the entire body of that service provider's customers. The Canadian Radio-television and Telecommunications Commission (the CRTC or Commission) regularly reviewed incumbents' programs in an annual Construction Program Review or at the next rate case.

The First Explicit Subsidies

In 1992, the Commission ordered the introduction of competition in the long distance market.[22] The resulting competitive pressures led to a steep decline in long distance prices, the principal source of the internal subsidy to local prices. To compensate for this, at least in part, the Commission required new entrants into the long distance market (alternate providers of long distance services) to pay a contribution to the incumbent in whose territory they were operating, consisting of so many cents per originating minute and so many cents per terminating minute. This explicit subsidy was then used to reduce the incumbents' revenue requirement and hence to lessen pressure on prices for local residential service.

The amount of the subsidy was estimated by partitioning the revenue requirement into broad service categories, including long distance services as a group, estimating the cost on a revenue requirement basis, subtracting that from revenues, and expressing the result on a per minute basis. Effectively the costs were embedded costs, i.e. the costs whose recovery would make the incumbent whole[23].

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[21] There is a limited obligation to serve on the part of Bell Canada, which is to provide service "with all reasonable dispatch" to premises located within 62 metres of existing facilities. *Bell Canada Act* (S.C. 1987, c.19), s.6

[22] Telecom Decision CRTC 92-12, *Competition in the provision of public long distance voice telephone services and related resale and sharing issues*, 12 June 1992. Specifically, the CRTC ordered incumbents to allow new entrants into the long distance market to use the incumbents' local distribution network for originating and terminate long distance calls. There had been limited competition before for certain services, but those services had never been a significant source of cross-subsidy.

[23] Extensions and upgrades of service continued, in principle, as part of the rate base rate of return process. However, in reaction to the introduction of long distance competition, certain incumbents unilaterally terminated such programs, expressing uncertainty that they would ever recover their costs.

Note also that these explicit subsidies were specific to each incumbent. Actual and potential customers of one incumbent were not contributing, through higher prices, for prices being charged to customers of a different incumbent.[24]

Subsidies to High Cost Serving Areas

In 1997, the Commission decided to open the local services market to competition as well.[25] Incumbents had to lease certain network elements to new entrants. The intention was that the new entrants would combine these network elements with their own components, and so offer a competing service. The principal elements to be so treated were unbundled local loops, i.e. distribution plant used to connect individual premises.

The question soon arose as to whether new entrants were also eligible to receive subsidies for providing local service. This led to a broader review of the subsidy mechanism in Decisions 99-16 and 2000-745, and a complete redesign, effective 2001.[26]

Under the new regime, subsidies were based on the need to keep local residential rates at an affordable level, as determined by the Commission. In locations where the costs were higher than such rates, the difference would be covered by a subsidy (or contribution, as this particular subsidy was referred to). Thus, the subsidy was to be determined by shortfalls for certain local services, rather than surpluses for long distance and other services.

The objective of the subsidy was changed as well. Previously, the purpose was to make the incumbent whole, given its obligation to provide service on demand and the regulatory constraints to keep rates affordable. In Decision 2000-745, the Commission enunciated additional principles, which effectively became the key principles, at paragraph 8:

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[24] As usual, reality was more complicated. The various incumbents, each with a monopoly in its own operating territory, transited and terminated traffic originated in another's territory. The revenues from such intercompany long distance calls was settled, i.e. divided among them. One factor in the division was an effective subsidy from richer provinces such as Ontario, Quebec and British Columbia to poorer provinces such as the Maritimes. This was a voluntary arrangement, one the Commission tried to end in 1981 in Decision 81-13, but without success. The arrangement was replaced by cost-based reciprocal interconnection charges once the incumbents started competing with each other in 1999.

[25] Telecom Decision CRTC 97-8, *Local Competition*, 1 May 1997

[26] Telecom Decision CRTC 99-16, *Telephone service to High Cost Serving Areas*, 19 October 1999; Telecom Decision CRTC 2000-745, *Changes to the contribution regime*, 30 November 2000

> The Commission finds that additional contribution collection criteria and principles are appropriate for today's more competitive telecommunications industry. In particular, the collection mechanism must promote fairness, ratepayer equity, economic efficiency, technological neutrality and competitive equity. The mechanism must be fair to all market participants and should not adversely affect one service provider over another. It should also promote economic efficiency by limiting distortions in the telecommunications market. Further, the mechanism should be competitively-equitable by promoting the efficient allocation of resources and avoid unfair advantages to any service or service provider. The Commission also considers that the mechanism should be technologically neutral whereby service providers should not be penalized or favoured by their choice of technology. Finally, the mechanism should be equitable to ratepayers if more contribution is collected from users who make greater use of the network.

The new emphasis was to encourage competitive entry. Accordingly, new entrants as well as incumbents were now eligible to collect subsidy. The calculation of the eligible costs were prospective economic costs, i.e. the costs that an efficient new entrant would face. As a proxy, the incumbent's current costs of expansion were used.

Rather than estimating these economic costs individually for every location, telephone central offices, or switching centers, were grouped into eight Rate Bands, roughly according to the costs of serving them. Band E comprised small localities (fewer than 1,500 premises), Band F included slightly larger localities (more than 1,500 premises but less than 8,000) where distribution plant averaged at least 4 kilometers from central office to premises, Band G was made up of remote communities without all-year-round road access, and Band H was a special band in the Yukon and Northwest Territories. These four bands were defined as high cost serving areas (HCSAs), eligible for subsidy, or contribution.[27] An average economic cost per line was estimated for each of these four rate bands.

The subsidy per telephone line was then measured as the economic cost of building new plus operating and maintenance expenses, plus a markup of 15% toward the recovery of fixed

[27] Telecom Decision CRTC 99-16, *Telephone Service to High Cost Serving Areas*, 19 October 1999.

common costs, minus the price approved by the Commission. The subsidy was also reduced in light of the fact that, once the incumbent or new entrant extended service to a set of premises, it could also sell some highly profitable optional services, such as call waiting or caller identification.[28]

Funding of this subsidy turned out to be highly controversial. Three main issues emerged.

The first was whether each incumbent's subsidy (and those of new entrants operating in its territory) would be funded by customers within the incumbent's operating territory, with contribution rates varying from incumbent to incumbent according to each situation; or whether a single national contribution fund (NCF) would be created, which would add up the sum of all contribution requirements and collect that sum through a mechanism that would apply equally to all customers in Canada.

Efficiency considerations favored individual incumbent-specific funds, because there would be greater accountability for costs: each incumbent would have to collect these from its own customers, rather than shifting a part to the customers of other incumbents. However, equity considerations favored a single national fund, where all customers would contribute equally to what was seen as a social obligation. Accordingly, the Commission created a National Contribution Fund, with an independent third-party administrator.[29]

The second issue was the funding mechanism. Three proposals were considered (a) a charge per minute on long distance calls (b) a charge per active local line, or access line charge, and (c) a percentage of telecommunications revenues. The Commission chose the third, because it found it to be the most competitively fair and equitable. Further, by spreading the contribution across a very wide base, it could keep the rate low, thus reducing distortions and increasing economic efficiency.

The third issue was which revenues should be included in the base. The Commission decided on a very broad base, including all telecommunications services with the exception of retail Internet,

[28] The Commission imputed a monthly profit of $5 per line from such services.

[29] Telecom Decision CRTC 2000-745, *Changes to the Contribution Regime*, 30 November 2000.

customer premises equipment, and radio paging. The Commission was trying to promote adoption of Internet and felt that a contribution surcharge could be an obstacle. Customer premises equipment (sets, routers, and so on) was a highly competitive market with the vast majority of the competitors outside the Commission's jurisdiction. Competitive equity required excluding regulated carriers from the competition charge as well. Finally, the Commission established a de minimis exemption for enterprises with less than $10 million in telecommunications revenues.

The National Contribution Fund started at a level of almost $1 billion in 2001, as stated above. It was the Commission's stated intention to decrease this amount over time, chiefly by allowing rates to increase in HCSAs. As well, the costing methodology was changed in 2011.[30]

Finally, in 2011, the Commission changed the objective of the contribution regime once again. Rather than encouraging competitive entry, the subsidy was tied to an obligation to serve. By providing service on demand within the incumbent's operating territory, at regulated rates that were not compensatory, the incumbents were taking on a social obligation and should be compensated for doing so.

Since new entrants had no obligation to serve, they were no longer eligible to receive a subsidy from the NCF. As well in 2007, the Commission had started granting forbearance from rate regulation of residential services in localities where there was sufficient competition.[31] For reasons of competitive equity, incumbents were no longer eligible to receive contribution from the NCF in forborne exchanges, including HCSA exchanges.[32]

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[30] The Commission found that wireline customers were declining and that consequently large amounts of spare capacity were being freed up. This capacity could be used to serve any growth in demand. Accordingly, the valuation of local loops was no longer the cost of installing new loops, but rather the salvage that the incumbent would otherwise receive for the loop. The Commission approximated this salvage value by net book value of the loop, leading to a significant decrease in costs. In effect, the Commission reverted to the original objective of making incumbents whole.

[31] The criterion, imposed by Governor-in-Council, was the presence of at least three suppliers (including the incumbent), including at most one mobile operator, reaching at least 75% of premises in a given locality or exchange. Telecom Decision CRTC 2008-15, *Forbearance from regulation of retail local exchange services*, 6 April 2006, as amended by Order in Council P.C. 2007-532

[32] Competition, rather than regulation, would keep rates affordable

As a result, contribution from the NCF is payable only for residential local voice service, to incumbents with an obligation to serve, in non-forborne HCSA exchanges. The size of the national contribution fund in 2015 was some $111.5 million, or one eighth of what it was in 2001. This amounted to a charge of 0.55 per cent of eligible telecommunications revenues. The contribution rate in 2001 had been set at 4.5%.[33]

Again, it should be stressed that this subsidy has as its objective to make whole incumbents with an obligation to provide service on demand within their operating territories. It is not intended to fund network expansions or upgrades.

Service Improvement Plans

Network expansions and upgrades, to the extent they are uneconomic, are funded by a different mechanism, commonly referred to as service improvement plans.

As stated above, expansion of coverage and upgrade of service were historically part of rate of return regulation. The incumbent would propose new projects, either on its own initiative or at the regulator's direction, and the impacts would be scrutinized during an annual Capital Program Review. Once a project was approved, the capital and operating expenses would become part of the rate base. In turn, they would be funded by higher rates paid by the general body of subscribers, including, but not limited to the beneficiaries of the programs. For this reason, the Commission required a net present value study for each major project, as well as a variety of auxiliary indicators, including impact on service levels.[34]

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[33] See Telecom Decision CRTC 2015-533, *Final 2015 revenue percent charge and related matters*, 1 December 2015 and Telecom Decision CRTC 2000-745. The Commission is currently conducting a proceeding, pursuant to TNC CRTC 2015-134, to review the definition of basic service and the ways in which its widespread availability can be promoted. Under active consideration is whether the contribution to local voices can be reduced further, with the savings to be used to subsidize broadband access in HCSAs.

[34] Generally, for extension of service, each customer was expected to pay the first $1000 of construction charges. This could be paid in installments over time. See Telecom Decision CRTC 99-16 at paragraph 52. In 2002 the Commission capped projects at $25,000 per new customer premise served, so as to limit the impact on other customers. See Decision 2002-34 at paragraph 846. Unserved customers who did not fall within an approved service improvement plan could nevertheless obtain service by paying the relevant construction charges. The Commission required that an installment plan be made available for such charges. Decision 2002-34 at paragraph 857

In 1997, the Commission moved from regulating prices based on traditional rate of return regulation to price caps regulation.[35] As a result, expenditures on service improvement and service extension could no longer be rolled into a revenue requirement (with Commission approval) and recovered through the traditional rate setting process.

The essence of the price cap approach was to set a ceiling on various rates or baskets of rates, and to update that ceiling annually. For some services, including residential basic local service, each year the ceiling would be increased by economy-wide inflation and decreased by a productivity target, that the company was expected to reach or exceed. As well, the approach allowed for adjustments by exogenous factors. Exogenous factors were factors that affected telecommunications service providers, but not the economy in general. If they affected the economy in general, they would be reflected in the inflation factor. The factors had to satisfy three conditions:

- they are legislative, judicial or administrative actions which are beyond the control of the company;
- they are addressed specifically to the telecommunications industry; and
- they have a material impact on the Utility Segment of the company. [36]

Most exogenous factors are time-limited: after a certain time, the costs of the exogenous event are recovered and the exogenous factor is reversed. During the review of price caps regulation in 2002, the Commission found that reversal of exogenous factors, combined with the target productivity offset, would lead to price decreases. Given that local competition was still in its infancy, the Commission decided against price decreases for the affected services. Instead it

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[35] Telecom Decision CRTC 97-9, *Price cap regulation and related issues*, 1 May 1997. The possibility of a move to price caps was under contemplation when the *Telecommunications Act* was enacted in 1993. Accordingly, the Commission was explicitly given the power to substitute other modes of regulation for traditional rate of return regulation, at s. 26(5): "In determining whether a rate is just and reasonable, the Commission may adopt any method or technique that it considers appropriate, whether based on a carrier's return on its rate base or otherwise."

[36] Telecom Decision CRTC 2002-34, *Regulatory framework for second price cap period*, 30 May 2002, at paragraph 647

directed the incumbents to place an equivalent amount into a deferral account, one account for each incumbent.[37]

In 1999, the Commission had for the first time formally defined a basic service objective (BSO) and directed the incumbents to propose service improvement plans to reach these targets.[38] The incumbents' proposed plans were considered during the 2002 price caps review, and approved with some modifications.[39] Funding of these service improvement plans was to be done in large part by drawing down the deferral accounts just established.

More specifically, service improvement plans in non-HCSA locations were to be funded from the deferral accounts. This amounted to funding them by not implementing rate decreases that the customers of each incumbent would otherwise have enjoyed.

Service improvement plans in HCSAs were funded through the National Contribution Fund. The costs were added to the economic or current costs used to calculate the total subsidy requirement and recovered through the corresponding contribution payments. As stated in Decision 2002-34:

> 935. For HCSAs, the Commission notes that the expiry of certain time-limited exogenous factors permitted in the initial price cap period, as discussed in Part V of this Decision, would lower the level of the subsidy requirement since rates would be higher than otherwise. Since residence rates in HCSAs do not recover their associated Phase II costs, the Commission is of the view that it would be inappropriate to reduce these rates.
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> 936. On the other hand, the addition of SIP-related costs to the TSR calculation will increase the subsidy requirement. The net impact of these two changes will be a reduction in the overall subsidy requirement. Consequently, the Commission considers that it would not be appropriate to increase residence rates in HCSAs to recover SIP costs, but rather to use the time-limited exogenous adjustments in HCSAs to offset the costs of the SIPs in these areas.

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[37] Decision 2002-34, at paragraph 411

[38] Telecom Decision CRTC 99-16, , *Telephone Service to High Cost Serving Areas*, 19 October 1999

[39] Decision 2002-34, Part VIII

937. Accordingly, the Commission directs each company to add its Phase II SIP costs for HCSAs to the costs that flow into its TSR calculation.

Currently, the only major incumbent receiving funding from the National Contribution Fund for a service improvement plan is Northwestel. In 2015, Northwestel received $10.1 million for a service improvement plan approved by the Commission.[40] It should be noted that almost all of Northwestel's operating territory is characterized by very high costs. It would be very hard to fund a significant service improvement plan relying exclusively on Northwestel's customers.

As a consequence of these service improvement plans, and a few others since, voice telephony is available almost ubiquitously in Canada and universal access at affordable rates is no longer much discussed. To that extent, the Commission's programs should be considered a success.

Broadband

An important reason for the decline of voice telephony as an issue is that customers are increasingly substituting broadband Internet access and mobile services. As stated above, the Commission is currently engaged in a proceeding that is considering, among other things, whether broadband access should be included in the definition of basic services (the basic service obligation). Many proposals suggest that it should be, and that money from the National Contribution Fund be redeployed to subsidize residential broadband access in HCSAs.

Many programs to extend broadband access have been carried out over the past decade, funded in whole or in part by federal, provincial, and municipal governments, with strong community participation. These programs cover the up-front capital costs of network extensions; ongoing operating and maintenance are expected to be covered by rates charged to users. This model is working well, but is not expected to achieve universal broadband access.

A particular problem is in satellite-dependent communities, i.e. communities where the only means of backbone communications (or transport) into the community is via satellite. Because of the high cost of leasing satellite transponders, there will likely be an ongoing need for subsidy to

[40] Telecom Decision CRTC 2015-533, *Final 2015 revenue-percent charge and related matters*, 1 December 2015

serve these communities. This funding would likely come from the National Contribution Fund. Combined with reductions to subsidies to voice service, this would likely not result in big increases in the size of the National Contribution Fund. There may be need for funds from the NCF for broadband access in some other communities that are very high cost or where alternative sources of funding are simply not available

Traditionally subsidies were used to compensate the incumbent for its obligation to serve. That might have been appropriate for services where the incumbent had an existing network and merely had to extend it. However, for relatively new services such as broadband access, there is the possibility of holding a reverse auction for the provision of the service. The service provider requiring the lowest subsidy, while meeting standards of service, would receive both the obligation to serve and the subsidy. This model is being examined in the current Commission proceeding pursuant to Telecommunications Notice of Consultation CRTC 2015-134. It has the potential to reduce the size of subsidies to be paid, while encouraging competitive equity.

It should be noted that a variety of limited government programs have been made available over the past dozen years to make broadband access available in a variety of targeted communities. These programs, where the communities and the provincial or federal government cooperate with the service provider, have resorted to competitive auctions in many cases. While there has been no formal evaluation of such auctions, the general understanding is that they have been instrumental in extending broadband access at reasonable cost.

Video Relay Service

In 2014, the Commission mandated the introduction of video relay service.[41] This service enables hearing-impaired people to conduct telephone calls using sign language. Previously, the hearing impaired had to use teletypewriter-like keyboards to communicate.

The Commission found that video relay service should be included as a basic service, as not doing so would unduly discriminate against the hearing impaired. It further found that there should be a single national service, given economies of scale and also given the shortage of sign

[41] Telecommunications Regulatory Policy CRTC 2014-187, *Video relay service*, 22 April 2014.

language interpreters. Accordingly, it ordered that the service be funded from the National Contribution Fund, with an annual cap of $30 million, for all video relay service-related expenses.

This is an interesting initiative, broadening as it does the scope of activities that the Commission is willing to fund from the National Contribution Fund.

Key Elements of the Telecommunications Approach for Consideration

Basic telephone service that is universally available and affordable has long been an objective of both policy and regulatory practice.

Availability has been pursued by cross-subsidies within a telecommunications service provider. Existing customers pay slightly higher rates so that networks can be extended and upgraded, where doing so would not otherwise be economically viable. While customers benefiting from such extensions have been asked to pay part of the costs (recently, the first $1000), it has long been recognized that high construction charges are a serious obstacle. As a result, cross-subsidy from the body of customers, and from non-basic services when these were offered on a monopoly basis, has been an important policy instrument.

Because of the importance of universality, the telecommunications approach has provided for subsidies from the national body of customers to uneconomic serving areas. To the degree that availability and affordability is a concern for natural gas provision, especially in high cost areas, a pooled source of funds for such a subsidy may be desirable

Affordability has been a separate objective. Even when a network has been built out and upgraded, it was considered important to keep prices for basic service low. That would attract customers, who would use the facilities, and provide a connected society. The subsidies to pursue this social objective were originally from within a given telecommunications service provider. But over time, competition has eroded the basis for such subsidies. As well, some service providers simply do not have enough low-cost customers to generate subsidies toward

high-cost service areas. As a result, the subsidy to achieve affordability is now funded on a national basis, i.e. providing transfers between service providers' customers. This spreads the burden of affordability as widely as possible.

Where competitive options are available, the NCF subsidy model does not operate. A subsidy model for natural gas expansion may provide for competitive entry

While initially, the telecommunications approach was to encourage competitive entry, the current policy is to assist the incumbent provider with the obligation to serve. If competition for the franchise is thought desirable in the provision of natural gas service, the question of the necessity, size and availability of any subsidy must be considered. Traditionally subsidy levels have been determined based on incumbents' costs, and the various sources of revenues to recover these. A promising alternative is to hold competitive auctions, where various potential suppliers bid for a subsidy to offer a given level of service. The bidder requiring the lowest level of subsidy wins the auction. This approach avoids estimation of costs, while providing a measure of competition in the supply of the gas. This may well be an attractive option for both telecommunications and for other sectors, including natural gas.

Jurisdictional considerations

Before considering modification of its current approach to approving expansion of natural gas system facilities, the Board must first establish its jurisdiction to do so. The establishment of a fund, paid into by all gas utilities, and providing a subsidy to expansion of the distribution system of one specific utility, can only be an option if within the powers of the Board to do so pursuant to the *Ontario Energy Board Act*[42]("The *Act*"). It is not the intention of this evidence to provide a legal opinion concerning the powers of the Board to implement such a fund. However, there are a number of statutory provisions and important case law decisions that might provide a guide for the Board in determining this issue.

The *Act* provides for the regulation of distribution rates as follows:

[42] S.O. 1998, Chapter 15 Schedule B

36. (1) No gas transmitter, gas distributor or storage company shall sell gas or charge for the transmission, distribution or storage of gas except in accordance with an order of the Board, which is not bound by the terms of any contract....

(2) The Board may make orders approving or fixing just and reasonable rates for the sale of gas by gas transmitters, gas distributors and storage companies, and for the transmission, distribution and storage of gas.

(3) In approving or fixing just and reasonable rates, the Board may adopt any method or technique that it considers appropriate.

The Board objectives in natural gas regulation are set out in the *Act* as follows:

2. The Board, in carrying out its responsibilities under this or any other Act in relation to gas, shall be guided by the following objectives:

1. To facilitate competition in the sale of gas to users.

2. To protect the interests of consumers with respect to prices and the reliability and quality of gas service.

3. To facilitate rational expansion of transmission and distribution systems.

4. To facilitate rational development and safe operation of gas storage

5. To promote energy conservation and energy efficiency in accordance with the policies of the Government of Ontario, including having regard to the consumer's economic circumstances.

5.1 To facilitate the maintenance of a financially viable gas industry for the transmission, distribution and storage of gas.

6. To promote communication within the gas industry and the education of consumers.

The *Township of Dawn* [43]decision, cited earlier, established that the public interest that is to be considered by the Board in exercising its authority in all matters relating to or incidental to the production, distribution, transmission or storage of natural gas was the general or broad public interest. Since the *Township of Dawn* decision, case law has enhanced the discretion of the Board to fashion a rate structure in furtherance of its public interest objectives set out in sec. 2 of the *Act*.

In *Advocacy Centre for Tenants Ontario v. Ontario (Energy Board)*[44], the Divisional Court allowed an appeal of the Board's decision that it had no jurisdiction to order a "rate affordability assistance program" under the *Ontario Energy Board Act.* The Board was found to have the jurisdiction to establish a rate affordability assistance program for low income consumers purchasing the distribution of natural gas from the utility. The Board could take into account the ability to pay in setting rates. The Divisional Court was guided by the ordinary meaning of the expansive wording of s. 36(2) and (3) of the *Act*, as well as the purpose of the legislation provided by the context of the statutory objectives for the Board as set out in s. 2 of the *Act*. The majority decision noted the history of rate setting in giving efficacy to the promotion of the legislative purpose and an outcome that was reasonable and just. The jurisdiction to consider ability to pay in rate setting was explicitly within the *Act*.

In the Divisional Court decision, the Board was acknowledged to be an economic regulator rather than a formulator of social policy. However, the Board was authorized to employ "any method or technique that it considers appropriate" to fix "just and reasonable rates". And while "cost of service" is the root underlying principle of rate-setting, Board is authorized to employ "any method or technique that it considers appropriate" to fix "just and reasonable rates". Board

[43] *Union Gas Limited vs. Township of Dawn* (1977) 76 D.L.R. 613
[44] 238 O.A.C. 343 (Div. Ct.)

must determine what is "just and reasonable" within section 2 objectives, which includes protecting "the interests of consumers with respect to prices".[45]

> "However, in our view, the Board need not stop there [traditional rate-setting approach]. Rather, the Board, in the consideration of its statutory objectives might consider it appropriate to use a specific "method or technique" in the implementation of its basic "cost of service" calculation to arrive at a final fixing of rates that are considered "just and reasonable rates." This could mean, for example, to further the objective of "energy conservation", the use of incentive rates or differential pricing dependent upon the quantity of energy consumed. As well, to further the objective of protecting "the interests of consumers" this could mean taking into account income levels in pricing to achieve the delivery of affordable energy to low income consumers on the basis that this meets the objective of protecting "the interests of consumers with respect to prices."[46]

The Ontario Court of Appeal in *Toronto Hydro Electric System Ltd. v. Ontario (Energy Board)*,[47] upheld the Board's authority to require the appellant to obtain the approval of a majority of its independent directors before declaring any dividends. In doing so the court reiterated that the Board was a "highly specialized expert tribunal with broad authority to regulate the energy sector in Ontario" and "to balance the interests of ratepayers in terms of prices and service while at the same time ensuring a financially viable electricity industry that was both economically efficient and cost effective"[48]. The court concluded that the Board's power in respect of setting rates was to be "interpreted broadly and extended well beyond a strict construction of the task" .[49] In the result, the legislation reflected "a clear intent by legislators to use both a subjective and open-ended grant of power to enable the Board to engage in the impugned inquiry in the course of rate setting."[50]

The Supreme Court of Canada considered the Board's powers to disallow costs incurred by the applicant utility as a result of its collective agreement *Ontario (Energy Board) v. Ontario Power*

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[45] Ibid, paras 52,53, 55
[46] Ibid para 55
[47] , 99 O.R. (3rd)481 (C.A.)
[48] Ibid at p.485
[49] Ibid at p.490
[50] Ibid at p.492

Generation Inc[51]. In allowing the Board's appeal from the Ontario Court of Appeal decision to set aside the disallowance, the court determined that the *Act,* and associated regulations gave the Board broad latitude to determine the methodology it used in assessing utility costs, subject to the Board's ultimate duty to ensure that payment amounts it ordered be just and reasonable to both the utility and consumers. In this case, the nature of the disputed costs, and the environment in which they arose, provided a sufficient basis for the court to find that the Board did not act unreasonably in disallowing the costs.

The majority decision in the above-noted *OPG* case cited with approval the earlier Supreme Court of Canada Decision in *Bell Canada v. Bell Aliant Regional Communications*,[52] where the powers of the CRTC to set just and reasonable rates to accomplish the objectives of the *Telecommunications Act* in furtherance of statutory objectives in the legislation were confirmed and given an expansive interpretation. As described at greater length in the previous section, the Commission had ordered deferral accounts set up by incumbent local exchange carriers to record money from excess rates charged to local telephone subscribers, so as to avoid rate decreases that were perceived to be harmful to competition. The Commission decided that rather than refund the deferral account balances to the ratepayers, the money was to be spent by the incumbents on the extension of broadband service to rural and remote areas of their territories. The power of the Commission to do this was affirmed by the Supreme Court of Canada.

In so doing, the Supreme Court noted sec. 7 of the *Telecommunications Act* included among an extensive list of objectives the goals of:

> (a) to facilitate the orderly development throughout Canada of a telecommunications system that serves to safeguard, enrich and strengthen the social and economic fabric of Canada and its regions;
> (b) to render reliable and affordable telecommunications services of high quality accessible to Canadians in both urban and rural areas in all regions of Canada;
> (c) to enhance the efficiency and competitiveness, at the national and international levels, of Canadian telecommunications;

[51] 2015 SCC 44
[52] 2009 SCC 40, [2009] 2 S.C.R. 764

(f) to foster increased reliance on market forces for the provision of telecommunications services and to ensure that regulation, where required, is efficient and effective;

(g) to stimulate research and development in Canada in the field of telecommunications and to encourage innovation in the provision of telecommunications services;

(h) to respond to the economic and social requirements of users of telecommunications services;

As well, the Court referenced sec. 47 of the *Telecommunications Act* that provided

47. The Commission shall exercise its powers and perform its duties under this Act and any special Act

(a) with a view to implementing the Canadian telecommunications policy objectives and ensuring that Canadian carriers provide telecommunications services and charge rates in accordance with section 27;

The statutory objectives of the *Telecommunications Act* were thus given operational effect in enabling the accomplishment of capital programs from rates paid for services that were not related to the services to be provided by the funded programs. According to the Court:

> "A central responsibility of the CRTC is to determine and approve just and reasonable rates to be charged for telecommunications services. Together with its rate-setting power, the CRTC has the ability to impose any condition on the provision of a service, adopt any method to determine whether a rate is just and reasonable and require a carrier to adopt any accounting method. It is obliged to exercise all of its powers and duties with a view to implementing the Canadian telecommunications policy objectives set out in s. 7."[53]

In the result, considerable deference was to be afforded the Commission in the exercise of its rate-making powers exercised with its statutory objectives in mind:

> "In my view, therefore, the issues raised in these appeals go to the very heart of the CRTC's specialized expertise. In the appeals before us, the core of the quarrel in effect is with the methodology for setting rates and the allocation of certain proceeds derived from

[53] Ibid at Para 36

those rates, a polycentric exercise with which the CRTC is statutorily charged and which it is uniquely qualified to undertake."[54]

It is noteworthy that, while noting the existence in passing of s. 46.5 of the Telecommunications Act, which gives the Commission the explicit power to cross-subsidize services, the Court did not rely on it in any way, finding that the more general powers in ss. 47 and 7 were sufficient to empower the Commission to set higher rates for certain customers or services in order to subsidize other customers or services.[55]

There are, of course, differences in the objectives, operating environments, and nature of the decisions and services that have been considered in the case law cited. We have touched upon many of these elsewhere in this evidence. However, there would appear to be considerable case law support for a judicial finding of the existence of the jurisdiction in the Board to provide for the funding of uneconomic extensions of natural gas provision if thought necessary. To be thought necessary, it would also likely be required that such funding would be in furtherance of the statutory objectives provided in sec. 2 of the Act. The relevant objectives contained therein could possibly include: the protection of the interests of consumers with respect to prices and the reliability and quality of gas service (sec. 2. (2)); the rational expansion of the distribution system sec 2(3)); the promotion of energy conservation and energy efficiency in accordance with the policies of the Government of Ontario, including having regard to the consumer's economic circumstances; and the facilitation and the maintenance of a financially viable gas industry for the transmission, distribution and storage of gas (sec. 2(5.1)). [56]

[54] Ibid at Para 38

[55] In 1998, Parliament added s. 46.5 to the *Telecommunications Act*. S. 46.5(1) reads as follows: "The Commission may require any telecommunications service provider to contribute, subject to any conditions that the Commission may set, to a fund to support continuing access by Canadians to basic telecommunications services (S.C. 1998, c.8)."

[56] We have only considered such funding in the context of the natural gas distribution system and the distributors and franchises therein.

Key Considerations Applicable to a Natural Gas Expansion Subsidy Fund

If the Board determines that it is in the public interest to establish a fund for natural gas system expansion, say a Natural Gas Expansion Subsidy similar to CRTC's National Contribution Fund, it would have to take into account there following five key considerations:

1. The extent of the importance and availability of natural gas

2. The ability of competitive alternatives to provide for perceived needs without a subsidy or at a reduced subsidy

3. Board's jurisdiction is confined to natural gas system

4. Unlike the Board's low income program, system expansion is not income based

5. Determination of the extent of the subsidy by computation of benefits to shareholders, and ratepayers in expanded facilities area or all utility customers.

We address each one of these in turn.

As outlined in the Energy Minister's letter to the OEB Chair of February 15, 2015, *"as part of Ontario's Long Term Energy Plan (LTEP), the government committed to work with gas distributors and municipalities to pursue options to expand natural gas infrastructure to service more communities in rural and northern Ontario"*[57]. The Minister's letter suggests that the government believes that there is plenty of natural gas and that it should be available to more communities than are currently served and that distributed natural gas as a fuel is preferable to the alternatives. By announcing the $200 million in "Natural Gas Access Loans" and the $30 million in "Natural Gas Economic Development Grants" the government through the Minister of Economic Development, Employment and Infrastructure[58] clearly indicated that the funds are intended for the extension of natural gas distribution service and not for any other alternative fuels or sources of energy.

[57] EB-2015-0179, Exhibit A, Tab 1, Appendix A, Page 1
[58] EB-2015-0179.Exhibit A, Tab 1, Appendix A, Page 2

There are four alternative methods of expanding natural distribution gas service. The first is expansion of the existing natural gas distribution system by the nearest adjacent distribution utility into the new community. This has traditionally been the lowest cost alternative because it involves the least amount of construction of new facilities. The second is expansion of a utility not adjacent to the new community. This might involve construction of a transmission line through a territory of another utility in order to reach the new community. This is expected to be more costly and has rarely, if ever, been used. The third alternative is for a new distributor, which is not currently providing service in Ontario, to provide service to the new community. This alternative has been used in certain circumstances, particularly for distributors serving First Nations communities. In this case, the gas supply must be obtained from the adjacent distributor or from a transmission line directly connected to Trans Canada Pipe Lines. The fourth option is a subset of the third except that gas supply is obtained by transporting LNG and re-gassifying it instead of constructing a pipeline. This option has not been tried to date in Ontario. In considerations of alternatives, the Board is expected to develop selection criteria that would take into account the level of subsidy that each alternative entails and favour the alternatives that would have the least need for scarce subsidy funds. In competitive situations, the Board could hold a reverse auction similar to what CRTC is considering for new services such as broadband access. The service provider requiring the lowest subsidy, while meeting standards of service, would receive both the obligation to serve and the subsidy.

Certain parties have suggested that the Board consider alternatives to natural gas system expansion. This may be difficult in the context of implementation of any funding similar to the telecommunications model. The Board's jurisdiction would appear to be limited by the *Act* to the regulation of electricity and natural gas. The scope of the review spelled out in the Board's Procedural Order No.1 in this proceeding provides: *"Application under the Ontario Energy Board's own motion to consider potential alternative approaches to recover costs of expanding natural gas service to communities that are not currently served."* As the Board is reviewing the alternative approaches to recover costs of expanding natural gas service, we have not considered funding alternatives to natural gas service because of the perceived lack of jurisdiction to do so, and our understanding of the ambit of this proceeding. Such alternatives may, of course, be considered in the context of the Board's determination of the need to implement any new subsidies to achieve the expansion of natural gas service. .

These alternatives to recover natural gas system expansion costs are not income based. This means that there may arise possible real and perceived inequities stemming from the fact that lower income urban gas customers may be providing a subsidy for expansion of natural gas service for wealthier customers in rural and remote regions, particularly in cottage country. We have not attempted to suggest how the potentially conflicting interests of access and affordability could, or should, be balanced in relation to subsidized funding. We do note that the Board has other policies that deal with support for low income customers.

Expansion to new communities results in rate base growth for the utility and increased equity income for its shareholders. It also results in energy savings for new customers. These two groups are clear and immediate beneficiaries of system expansion. The benefits to existing customers generally consist of increased economies of scale where a utility's fixed costs are shared among a larger group of ratepayers. In the long run, this keeps rates from increasing as much as they would otherwise. As well, in the long run, existing customers benefit from a cross-subsidy from new customers after crossover is reached when the revenues from new customers exceed the costs of serving them. If existing customers are to subsidize system expansion for an extensive period until long run conditions are reached, the new customers and utility shareholders should also pay their fair share. The Board should look at the benefits accruing to each group to determine what costs should be assigned to each one. For example, shareholders could forgo a portion of the equity return for a number of years and new customers could pay a higher surcharge.

CONCLUSION

The Board in its review will need to deal with the broad public interest in gas system expansion. Unlike telephone service or electricity, there has never been an authoritative policy or even a societal objective to make natural gas service universally available and affordable. The Board will have to determine if such a policy is in its mandate, or in the public interest, to implement within the current system of energy policy and regulation.

The unstated policy of the Board appears to have been that gas service should be available to as many prospective customers as possible that can feasibly be served with some level of cross-subsidy in the early years from existing customers that would not place an undue burden on

them. In EBO188, the Board considered the level of this cross-subsidy and determined what was appropriate at that time. In this review, the Board will have to consider if societal perception of what is an appropriate cross-subsidy has changed since 1998, and if the impact of incentive regulation needs to be addressed. . The Board will also need to consider potential sharing of subsidy funds by utilities is in the public interest in order to level playing field for new entrants. In that regard, our evidence of the experience of the telecommunications industry might be of assistance.

End of Document

REFERENCES

Texts

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Phillips, Charles F. *The Regulation of Public Utilities*, Public Utilities Reports Inc.; Arlington, Virginia; 1993

Ontario Energy Board Decisions and Proceedings

EBO 134, *In the Matter of a Review by the Ontario Energy Board of the Expansion of the Natural Gas System in Ontario, Report of the Board* June 1, 1987

EBO188, *In the Matter of a hearing to inquire into, hear and determine certain matters relating to natural gas system expansion for The Consumers' Gas Company Ltd., Union Gas Limited and Centra Gas Ontario Inc., Final Report of the Board*, January 30, 1998

EB-2015-0179, *In the Matter of an Application by Union Gas Limited for an Order or Orders for approval of Union's Distribution System Expansion Project proposals; And in the Matter of an Application by Union Gas Limited for an Order or Orders granting leave to construct natural gas pipelines and ancillary facilities required to serve the communities of Milverton, Prince Township and, the Chippewas of Kettle and Stony Point First Nation and Lambton Shores. D*ocumentary Record

Decisions and Proceedings of the Canadian Radio-Television Telecommunications Commission

Telecom Decision 81-13, *Increases and Decreases in Rates and Facilities Furnished on a Canada-wide Basis by Members of the Trans Canada Telephone System and Related Matters*, July 7,1981

Telecom Decision CRTC 85-19, *Interexchange competition and other issues*, August 29, 1985

Telecom Decision CRTC 92-12, *Competition in the provision of public long distance voice telephone services and related resale and sharing issues*, June 12, 1992.

Telecom Decision CRTC 97-8, *Local Competition*, May 1 1997

Telecom Decision CRTC 97-9, *Price cap regulation and related issues* May1, 1997

Telecom Decision CRTC 99-16, *Telephone service to High Cost Serving Areas,* October 19, 1999;

Telecom Decision CRTC 2000-745, *Changes to the contribution regime*, November 30, 2000

Telecom Decision CRTC 2002-34, *Regulatory framework for second price cap period*, 30 May 2002,

Telecom Decision CRTC 2008-15, *Forbearance from regulation of retail local exchange services,* April 6,2006,

Telecommunications Regulatory Policy CRTC 2014-187, *Video relay service*, April 22, 2014.

Telecom Notice of Consultation 2015-134 *Review of Basic Telecommunications Services* April 9, 2015

Telecom Decision CRTC 2015-533, *Final 2015 revenue percent charge and related matters*, December 1, 2015

Judicial Decisions

Union Gas Limited vs. Township of Dawn, (1977) 76 D.L.R. 613

Advocacy Centre for Tenants Ontario v. Ontario (Energy Board) 238 O.A.C. 343 (Div. Ct.)

Toronto Hydro Electric System Ltd. v. Ontario (Energy Board), 44 99 O.R. (3rd) 481 (C.A.)

Ontario (Energy Board) v. Ontario Power Generation Inc., 2015 SCC 44

Bell Canada v. Bell Aliant Regional Communications 2009 SCC 40, [2009] 2 S.C.R. 764

Legislation and Statutory Instruments

Bell Canada Act, S.C. 1987, c.19,

Telecommunications Act, S.C. 1993, c. 38

Order Issuing a Direction to the CRTC on Implementing the Canadian Telecommunications Policy Objectives, SOR/2006-355, December 14, 2006

Order in Council P.C. 2007-532 Order Varying Telecom Decision CRTC 2006-15 (Forbearance from the regulation of retail local exchange services), April 4, 2007

Ontario Energy Board Act, S.O. 1998, Chapter 15 Schedule B

Appendix A

FORMA

Proceeding: EB 2016-0004

ACKNOWLEDGMENT OF EXPERTS DUTY

My name is George Hariton. I live at 13 Carlaw Avenue, Ottawa in *The province of Ontario.*

I have been engaged by or on behalf of the Vulnerable Energy Consumers Coalition to provide evidence in relation to the above-noted proceeding before the Ontario Energy Board.

I acknowledge that it is my duty to provide evidence in relation to this proceeding as follows:

- to provide opinion evidence that is fair, objective and non-partisan;
- to provide opinion evidence that is related only to matters that are within my area of expertise; and
- to provide such additional assistance as the Board may reasonably require, to determine a matter in issue.

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: 2016-03-18 Signature: George Hariton

George Hariton

George Hariton 2016-03-18

George Hariton
13 Carlaw Avenue
Ottawa, Ontario, Canada
K2G 0P9

Telephone: 613 852 1177
e-mail: ghariton@sympatico.ca

Fluent in French and English

Called to the Ontario Bar 2005

Education:

2011	M.Sc. Finance & financial law	University of London
2008	LL.M. Competition law	University of London
2004	J.D. Law	University of Toronto
1982	M.A. Economics	Carleton University
1972	Ph.D. Mathematics	University of Toronto
1968	M.A. Statistics	Princeton University
1966	B.Sc. Physics	McGill University

Work Experience:

1999 – 2016: Principal, TIA consulting

- Provide legal and economic services to a variety of public and private sector clients
- Consult in communications, financial institutions and services, competition policy, transportation, and consumer protection law and regulation
- Specialties include market structure and entry, pricing, essential facilities, and subsidies
- Expert witness in administrative law hearings on wholesale access and services, price caps, productivity, pricing, and economic costs of services
- Senior advisor to government policy reviews, resulting in significant reform of regulation

1995 – 1998: Vice President, Regulatory Matters, Bell Canada

- Expert witness, on local competition , price caps regulation, design of subsidies to high cost serving areas, and benchmarking service costs to other telecommunications carriers

1992 – 1995 Vice President, Finance, Bell Canada

- Chief economist
- Demand and revenue forecasts and analyses, including budgets and reconciliation of monthly results
- Expense analysis and cost estimation for new and existing services
- Examine alternative forms of regulation
- Evaluate business plans and marketing strategies

1989 – 1992 Assistant Vice President, Engineering Economics, Bell Canada

- Business cases and evaluation of new investments and services
- Designed and implemented Bell Canada regulatory strategy for the introduction of competition for long distance services

1987 --1989 Director of Business Analysis, Nortel

- Business cases and evaluation of new products, including frame relay and fiber to the home
- Portfolio analysis of research projects: potential returns, risks, and synergies

1981 --1987 Executive Director, Research, Canadian Transport Commission

- Economic and social research in rail, air, water and road transport, including deregulation
- Support for economic and social regulation for all modes, and for rail safety, including chairing public meetings after Mississauga derailment
- Design and help implement regulation to assist the physically disabled on federally regulated carriers
- Expert witness in hearings on airline deregulation

1979 – 1981 Director-General, Economic and Financial Analysis, Canadian Radio-Television and Telecommunications Commission (CRTC)

- Regulation of telecommunications and broadcasting in Canada

1972 – 1979 Various positions, Research Branch, Canadian Transport Commission

- Economic analysis and regulatory support for telecommunications, air and rail transport
- Formal cost inquiries into the costs of rail and telecommunications services
- Alternative forms of regulation, including price caps

Other Activities:

2001-2016	Provide online financial education to individual retail investors (2009-2016 member of the Board of Directors of FWR Ltd, a non-profit educational forum)
1997-1999:	Consultant to Bell Canada International Evaluation of business cases for investments in Mexico, Columbia, Peru and Brazil; presentations to national regulators
1995-1998:	Member, Advisory Committee, Conference Board of Canada study of regulated industries
1994-1996:	Member, Advisory Council, Centre for the Study of Regulated Industries, McGill University
1994-1995:	Sysop, Compuserve Moderated on-line discussion groups
1984-1985:	Chair, Canadian Institute of Guided Ground Transport, Queen's University
1984-1987:	Adviser, FCAR, Gouvernement du Quebec Evaluation of research proposals for government funding
1983-1984:	Member, Canada Grains Council
1983-1988:	Sessional Lecturer, Department of Civil Engineering, Carleton University Taught graduate courses in transportation engineering
1982-1988:	Member, Special Education Advisory Committee, Carleton Board of Education
1981-1982:	President, Briargreen Community Association
1979-1984:	Consultant, Transportation Water and Telecommunications Division, World Bank; projects in Bolivia, Argentina, Kenya and China
1973-1976:	Union steward and organizer, PIPS and ESSA (federal public service unions)

FORM A

Proceeding: EB-2016-0004

ACKNOWLEDGMENT OF EXPERT'S DUTY

1. My name is TOM LADANYI (*name*). I live at TORONTO (*city*), in the PROVINCE (*province/state*) of ONTARIO.

2. I have been engaged by or on behalf of VECC (*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 MARCH 18, 2016

Signature

Thomas J. Ladanyi P. Eng. CPA

Home: (416) 423-3685
tom.ladanyi@rogers.com

EDUCATION

Executive Program	Queen's University	1997
CMA	Society of Management Accountants	1987
M.A.Sc.	University of Toronto	1974
B.Eng.	McGill University	1972

PROFESSIONAL AFFILIATIONS

Association of Professional Engineers of Ontario
Chartered Professional Accountants Canada
Society of Management Accountants of Ontario
American Society of Mechanical Engineers
Canadian Nuclear Society

EXPERIENCE

Energy Regulatory Affairs Consultant **2016 - present**

Provides advice to energy industry clients in the areas of regulatory approvals, regulatory accounting, utility rates, incentive regulation, and energy markets.

Ontario Power Generation **2010 - 2015**

Manager, Regulatory Affairs 2010 - Present

Responsible for management of a number of issues in the 2014-15 payments applications to the OEB, specifically the Darlington Nuclear Station refurbishment issues, nuclear projects issues, and incentive regulation. Provided regulatory assistance on a number of major issues in the 2011- 2012 payments application to the OEB including finance, taxation, pension and benefits costs, Darlington Refurbishment construction work in progress issues, nuclear liabilities and incentive regulation. Provided analysis and advice on projects to convert Lambton, Nanticoke, and Thunder Bay coal power station to natural gas. Represented OPG at the OEB Natural Gas Market Review and the Trans Canada Tolls Task Force

Enbridge Gas Distribution (Consumers Gas) **1990 - 2010**

Manager, Budgets and Financial Analysis 2007 – 2010

Responsible for the management of regulatory and corporate budgets of Enbridge Gas Distribution, including revenues, capital expenditures, operating and maintenance costs, earnings forecasts and the long range financial plan. Also responsible for the preparation of earnings forecasts and for financial analysis. Was a member of a team that designed the Incentive Regulation model for 2008 -2012 which was approved by the OEB. Appeared as the finance witness at the 2008 OEB proceedings dealing with IR issues and 2009 rates, and was a witness at a 2009 proceedings on earnings sharing and 2010 rates. Developed and implemented new Capital Management and Controls System.

Manager, Budgets and Planning 2004 - 2007

Responsible for the management of regulatory and corporate budgets of Enbridge Gas Distribution, including revenues, gas costs, capital expenditures, operating and maintenance costs, earnings forecasts and the long range financial plan. Implemented new Revenue Analysis and Volume Estimation System. Appeared as the finance witness at the 2006 and 2007 OEB rate hearings providing testimony on capital expenditures, operations and maintenance costs, and corporate policy issues.

Manager, Regulatory Proceedings 1999 - 2004

Responsible for the management of proceedings before the Ontario Energy Board and the National Energy Board including rate hearings, franchise and certificate applications, storage contract approvals, and interventions. The work included identification of issues, development of regulatory strategy, preparation of evidence, review of interrogatory responses, negotiations with intervenors and Board Staff, preparation of witnesses and counsel, management of the hearing proceeding, management of the preparation of argument, interpretation and analysis of the decision, and the review of the rate order. Organized and conducted the ongoing Utility Regulation and Rates course for Enbridge employees.

Manager, Operations Information Technology 1998 - 1999

Responsible for the management of information technology for gas distribution operations including responsibilities for computer technology and radio frequency data and voice communication systems. Work included development of vision and strategy, business process analysis, identification of opportunities for cost reductions and productivity improvements, development of new applications and enhancements to existing applications, and benefits tracking. Brought a major IT project to successful completion.

Manager, Regulatory Services 1997 - 1998

Responsible for case management of regulatory submissions and filings. These included applications to the Ontario Energy Board for leave to construct, municipal franchise and certificate applications with respect to distribution system operation and expansion, various regulatory applications for underground storage system expansion; and facilities applications to the National Energy Board for new construction projects involving federally regulated pipelines. Responsibilities also included management of a load research and analysis group.

Manager, Regulatory Administration and Special Projects 1994 - 1997

Responsible for the administration and co-ordination of regulatory submissions and filings. These included applications to the Ontario Energy Board for annual rate reviews, franchise and certificate applications with respect to distribution system operation and expansion, various regulatory applications for underground storage system expansion; and facilities applications to the National Energy Board for new construction projects involving federally regulated pipelines. The work also included assistance to senior management in the formulation of the Company's position on utility diversification, the preparation of the strategy and the business plan for the international consulting division and the business case for the start-up of a water and wastewater business unit. Negotiated EBO 188 System Expansion Guidelines with Ontario Energy Board Staff, other gas distribution utilities and intervenors.

Manager, Regulatory Accounting 1991 - 1994

Responsible for the preparation of accounting and financial information required by the Ontario Energy Board in rate of return hearings. Work included testifying at Ontario Energy Board hearings as to the content, accuracy and underlying principles of the material presented in rate filings. Prepared a financial model for the long range strategic plan.

Manager, Engineering Projects 1990 -1991

Responsible for project management of major pipeline construction projects, Leave-to-Construct applications to the Ontario Energy Board, National Energy Board Facilities Applications, administration of construction contracts and preparation of contract specifications for a pipeline construction program of approximately $40 million. Work included planning, budgeting, scheduling, design, specifying and approving materials, environmental assessment, contact award and progress monitoring.

TransCanada PipeLines Ltd **1974 -1990**

Manager, Project Services 1989 -1990

Responsible for capital budget estimates, construction contract tendering, bid analysis, contract award, project administration, billings processing, holdback, progress and cost monitoring, expenditure forecasts, analysis of costs and variance reporting. Work also included information filings to the National Energy Board for rate hearings and facilities applications and testifying

before the National Energy Board in a rate hearing. Negotiated successful resolution of contract disputes with construction contractors.

Manager, Pipeline Design 1988 -1989

Responsible for project management of all pipeline construction projects including looping, pipe replacements, and major maintenance with a total budget of $350 million. Work included budgeting, planning, scheduling, design, specifying and approving materials, contract preparation, bid analysis, progress monitoring, and performance evaluation. Testified before the National Energy Board at three facilities hearings.

Assistant Manager, 1985-1988
Pipeline and Station Facilities

Responsible for the preparation of operating and emergency procedures for pipeline and compressor station facilities, approvals of pipeline crossing applications, reporting of incidents to the National Energy Board, investigation of incidents, operation of telecommunication facilities required for pipeline operations, major maintenance scheduling, and maintenance budgeting and planning. Testified before the Public Service Commission of New York State on behalf of the Iroquois pipeline project.

Supervising Engineer, 1983-1985
Construction Planning and Pipeline Design

Responsible for pipeline project supervision, construction planning, scheduling, budgeting, project description, preparation of tender documents, bid analysis, ordering of materials, and progress reporting. Acted as a consultant to Shell Canada on the conversion to natural gas of the Montreal - Portland oil pipeline.

Assistant Supervising Engineer, 1974-1983
Quality Control

Responsible for the preparation of contract specifications for welding and pressure testing of pipeline and station facilities, for the preparation of welding procedures and pressure testing calculations, inspection of pipeline materials, writing of materials specifications, and analysis of pipeline leaks and breaks. Prepared reports for filing with the National Energy Board and met with National Energy Board staff on numerous occasions to explain filed information. Organized training programs for welding and coating inspectors and for pressure testing technicians.

University of Toronto

Department of Metallurgy and Materials Science

Teaching Assistant 1972-1974

Assisted in the teaching of a course on the properties of materials and supervised the metal casting laboratory.

APPEARANCES AS WITNESS BEFORE REGULATORY TRIBUNALS

Ontario Energy Board: **1991- present**

EB-2009-0172 Rate Application for the 2010 Test Year. Filed evidence on gas volume forecast, revenue forecast and Incentive Regulation formula inputs. Was a member of a team that negotiated a settlement of all issues related to rate setting for 2010.

EB-2009-0055 Earnings Sharing for 2008. Filed evidence on 2008 gas volumes, revenues, depreciation expense, O&M expense, capital expenditures and customer additions.

EB-2008-0219. Rate Application for the 2009 Test Year. Filed evidence on gas volume forecast, revenue forecast, customer additions, and capital budget for leave to construct power generation projects. Was a member of a team that negotiated a settlement of all issues related to rate setting for 2009.

EB-2007-0615, Rate application for the 2008 Test Year and the start of the Year Incentive for 2008-2012. Regulation Plan. Was a member of the team that designed the Incentive Regulation model for Enbridge Gas Distribution and proposed it to the OEB. Provided evidence in support of the model including historical information relating to productivity and customer additions. Participated in negotiations that resulted in settlement of most of the issues. Testified in support of the customer growth forecast and customer attachment policies and obtained OEB approval.

EB-2006-0034 , Rate application for the 2007 test year. Filed evidence on gas volume budget, revenue budget, capital budget, depreciation expense budget, and O&M budget. Participated in negotiations which resulted in the settlement of most of the issues except for the new degree day forecast methodology. Together with other team members testified in support of the new methodology which was approved by the OEB. The adoption of the new methodology resulted in approximately $15 million in increased revenues for 2007.

RP-2005-0001, Rate Application for the 2006 Test Year; testified on the policy issues, capital budget, and operations and maintenance budget. Participated in negotiations leading to the settlement of the volumes and revenues forecast.

RP-2004-0213, Natural Gas Forum; testified on issues related to gas storage development, operations, and rate setting.

RP-2003-0203, Rate Application for the 2005 Test Year; testified on the application for a Class Action Suit Deferral Account, presented testimony on the Manufactured Gas Plant Variance Account.

RP-2003-0048, Rate Application for the 2004 Test Year; testified on the rate setting proposal, and presented testimony on Fiscal 2003 Operating Results.

RP-2002-0133, Rate Application for the 2003 Test Year, testified on the Settlement Proposal, and on corporate cost allocation methodology and the Manufactured Gas Plant Deferral Account,

presented testimony on Regulatory Affairs O&M, Service Quality Indicators, and Incentive Regulation Base adjustments.

RP-2002-0106, Application for Approval of the Purchase of the Wellandport Gas Company by Enbridge, testified on the regulatory treatment of the purchase premium over book value of Wellandport assets.

RP-2001-0032, Rate Application for the 2002 Test Year; testified on the Settlement Proposal, and presented testimony on PBR O&M and the Service Quality Indicators report.

RP-2000-0040, Rate Application for the 2001 Test Year; testified on the Settlement Proposal and presented testimony on PBR O&M, Service Quality Indicators report, and the Outsourcing Plan Deferral Account.

EBRM 106, Application for expansion of the Kimball-Colinville Gas Storage Pool, testified on regulatory accounting and administration issues.

EBRM 105, Application for expansion of the Dow Moore Gas Storage Pool, testified on regulatory accounting and administration issues.

EBRO 490, Rate Application for the 1996 Test Year; testified on the proposal to establish Consumers Gas International Group that would provide consulting services to outside clients.

EBRO 487, Rate Application for the 1995 Test Year; testified on regulatory accounting issues, regulatory treatment of Lost and Unaccounted for Gas related to Tecumseh Gas Storage operations.

EBRO 485, Rate Application for the 1994 Test Year; testified on regulatory accounting issues, and the UCC balance related to Tecumseh Gas Storage assets.

EBRO 479, Rate Application for the 1993 Test Year; testified on regulatory accounting issues, capital costs of the Mississauga Southern Link project, inclusion in rate base of the purchase premium over book value of Tecumseh Gas Storage shares purchased from Imperial Oil.

EBRO 473A, Application for Interim Rate Increase (1992); testified on the regulatory accounting issues related to the increase.
EBLO 238, Mississauga Southern Link Leave to Construct Application (1991); testified on the need for the project, design specifications, material specifications, cost estimates, construction schedule. The application was approved by the OEB.

National Energy Board:

GH-3-88, St. Clair Pipelines Application; witness for TransCanada PipeLines which intervened in the proceeding, testified on construction planning and pipeline design issues.

GH-4-88, TransCanada's 1988 Facilities Application; testified on the construction planning, pipeline design and cost estimates for the construction of 334 km of large diameter pipeline.

GH-1-89, TransCanada's 1989 Facilities Application; testified on the construction planning, pipeline design, and cost estimates for the construction of 495 km of large diameter pipeline.

RH-3-89, TransCanada's 1990 Tolls Application; testified on the capital cost of projects to be included in rate base.

Public Service Commission of New York State:

Docket No.70363, Application for the approval of the Iroquois Pipeline project, 1986-1987; testified on pipeline design, operations plan, and pipeline safety at hearings in Albany and Dover Plains, New York.

REGULATORY CASE MANAGEMENT

Case management for larger cases included identification of issues, development of regulatory strategy, preparation of evidence, review of interrogatory responses, negotiations with intervenors and Board Staff, preparation of witnesses and counsel, management of the public hearings, management of the preparation of argument, interpretation and analysis of the decision, and the review of the rate order. Many of the smaller cases were dealt with through a written hearing process and did not involve some of the above activities.

Ontario Energy Board:

Rate Cases: RP-2003-0203 (2005 Test Year), RP-2003-0048 (2004 Test Year), RP-2002-0133 (2003 Test Year), RP-2000-0040 (2001 Test Year), RP-1999-0001 (2000 Test Year).

Leave to Construct Cases: EBLO 241, EBLO 250, EBLO 254, EBLO 255, EBLO 258, EBLO 260, EBLO 256, EBLO 261, EBLO 262, RP-2001-0014, RP-2001-0057, RP-2002-106.

Franchise Applications: EBA 689, EBA 690, EBA 699, EBA 710, EBA 711, EBA 712, EBA 713, EBA 714, EBA 715, EBA 718, EBA 723, EBA 737, EBA 791, EBA 791-01, EBA 795, EBA 818.

Certificate of Public Convenience and Necessity Applications: EBC 214, EBC 215, EBC 216, EBC 223, EBC 224, EBC 234, EBC 235, EBC 236, EBC 237, EBC 238, EBC 246, EBC 266, EBC 270, EBC 271, RP-1999-0013, RP-2000-0011, RP-2000-0012, RP-2000-0020, RP-2000-0242.

Reports to the Minister of Natural Resources: EBRM 105, EBRM 106, EBRM 108, EBRM 110.

Generic Proceedings: EBO 188 (Natural Gas System Expansion), Forum on Utility Diversification, RP-2004-0213 Natural Gas Forum.

Exemption Applications: PL 89, PL 93, PL 94, PL 96, PL 97, PL 102.

Undertakings Applications: EBO 179-01 (Affiliate Transaction with Niagara Gas Transmission), EBO 179-02 (10 Year Contract with Niagara Gas Transmission) , EBO 179-03 (Consulting Services Contract with IPL Technology), EBO 179-04 (Relocation of Treasury to Calgary), EBO 179-05 (Payment of Management Fee to IPL), EBO 179-06 (Affiliate Transaction with IPL Insurance Barbados Limited) , EBO 179-07 (Electronic Gas Trading Board), EBO 179-08 (Purchase of Gas from St. Lawrence Gas Company), EBO 179-09 (Investment in Ontario One Call Ltd.), EBO 179-10 (Contract with IPL Technology and Consulting) , EBO 179-11 (Contract with St. Catharines Hydro), EBO 179-12 (Support for Maritimes Project), EBO 179-13 (Management Services for Consumers Gas Energy Inc.), EBO 179-16 (Preferred Stock Tax Transaction with IPL System Inc.), EB-1999-0468 (Home Gas Appliance Inspection, Natural Gas for Vehicles, the merchant function, the Agent Billing and Collection Program, and Oil Production Activity).

Quarterly Rate Adjustment Filings: EB-2000-0084, EB-2000-0137, EB-2001-0033, EB-2001-0419, EB-2001-0790, EB-2002-0213, EB-2002-0364, EB-2002-0431, EB-2002-494, EB-2003-0032, EB-2003-0126, EB-2003-0229, EB-2003-0288, EB-2004-0209, EB-2004-0266.

Other Applications: EBO 182, EBO 189, EBO 190, EBO 196, EBO 197, EBO 198, EBO 203, RP-2004-0147.

National Energy Board:

Facilities Applications: XG-N6-41-95, TG-6-95.

Tolls and Tariff Applications: for Niagara Gas Transmission (Link Pipeline and the Ottawa River Crossing), and for Consumers (Canada) now 2193914 Canada Limited.

INDUSTRY COMMITTEE WORK

National Energy Board:

Trans Canada Tolls Task Force, member,	2011 - 2015

Ontario Energy Association:

Chair, Working Committee on Regulatory Symmetry	2004

Ontario Energy Board:

Uniform System of Accounts Committee	1993-1994

Canadian Standards Association:

Subcommittee on Steel Line Pipe	1990-1991
Design and Materials Subcommittee	1988-1991
Design and Testing Task Force	1988-1989
Crossings Task Force	1983-1988
Transmission Subcommittee (Alternate)	1983-1988
Qualification of Welding Inspectors	1980-1983
Fracture Toughness Task Group	1977-1981

American Gas Association:

Welding Supervisory Committee	1979-1983
Stress Corrosion Task Group	1977-1981

American Society of Mechanical Engineers:

Gas Transmission and Distribution Piping Systems	1988-1990

International Gas Union:

Subcommittee on Gas Transmission System Reliability	1986-1988

Ontario Natural Gas Association:

Operating Committee	1985-1986

SPECIAL STUDIES

Alternative Regulatory Frameworks, Public Utilities Reports, The Management Exchange, 1992
Determining Cost of Capital, Public Utilities Reports, The Management Exchange, 1992
Price Regulation of Public Utilities, Society of Management Accountants, 1987
Corrosion Prevention by Cathodic Protection, National Assoc. of Corrosion Engineers, 1977
Welding Design and Practice for Engineers, Welding Institute of Canada, 1976
Fundamentals of Non-destructive Testing, American Society for Metals, 1975

PRESENTATIONS AND PUBLICATIONS

"TransCanada's Public Awareness Program", T.J. Ladanyi, The Canadian Petroleum Association Pipeline Conference, Calgary, Alberta, May 1987.

"Full Scale Field Weldability Testing of High Strength Line Pipe", T.H. North, A.B. Rothwell, T.J. Ladanyi, R.J. Pick and A.G. Glover, Metals Society Conference: Steels for Line Pipe and Pipeline Fittings, London, England, October 1981

"Fracture Toughness of Powder Forged Cr-Mn alloy Steels", T.J. Ladanyi, G.A. Meyers, R.M. Piliar and G.C. Weatherly, Metallurgical Transactions, Vol. 6A, November 1975.

REGULATORY TEACHING ACHIEVEMENTS

Was invited by Toronto Hydro in 2008 to give a presentation on the regulatory budget process and incentive regulation.

Was invited by the Ontario Power Generation Regulatory Affairs department to give presentations to the department staff in 2004, 2005, 2006, and 2009 dealing with cost of service and incentive regulation of utilities.

Was invited in 2003 by McMaster University Economics Department to give a presentation to students on rate regulation of utilities in Ontario.

Was asked by Enbridge Human Resources department to develop, organize and teach the Utility Regulation and Rates Course for company staff. The course has been well received and has been held a number of times since 2001.

Was asked by the Ontario Energy Board to conduct a training session for OEB Staff which was held in 2001. OEB later used the presentation material from that session for the internal training.

Was invited in 1997 by the University of Toronto Schulich School of Business to give a presentation to MBA students on the regulation of gas utilities.

Was asked by the Canadian Gas Association to teach the Revenue Requirement and Performance Based Regulation part of the Canadian Natural gas Regulatory Course and taught the course for 9 years, from 1996 to 2004. The course was presented in Kananaskis, Alberta, 1996; Montreal, 1997 ; Vancouver, 1998 ; Halifax, 1999; Toronto, 2000; Regina, 2001; Montreal, 2002; Vancouver, 2003; and Ottawa, 2004.