BEFORE THE

MANITOBA PUBLIC UTILITY BOARD

Manitoba Hydro	:	
2014/15 and 2015/16 General	:	
Rate Application	:	Docket No. _____
	:	

DIRECT TESTIMONY AND EXHIBITS OF

ROGER D. COLTON

ON BEHALF OF

GREEN ACTION CENTRE (GAC)

April 24, 2015

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Q. PLEASE STATE YOUR NAME AND ADDRESS FOR THE RECORD.

A. My name is Roger Colton. My business address is 34 Warwick Road, Belmont, Massachusetts 02478.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A. I am a principal in the firm of Fisher Sheehan & Colton, Public Finance and General Economics of Belmont, Massachusetts. In that capacity, I provide technical assistance to a variety of federal and state agencies, consumer organizations and public utilities on rate and customer service issues involving telephone, water/sewer, natural gas and electric utilities.

Q. FOR WHOM ARE YOU TESTIFYING IN THIS PROCEEDING?

A. I am testifying on behalf of the Green Action Centre (GAC) of Winnipeg, Manitoba.

Q. PLEASE DESCRIBE YOUR PROFESSIONAL BACKGROUND.

A. I work primarily on low-income utility issues. This involves regulatory work on rate and customer service issues, as well as research into low-income usage, payment patterns, and affordability programs. At present, I am working on various projects in the states of Connecticut, New York, Pennsylvania, Michigan, Illinois, Iowa, Wisconsin, Minnesota and Colorado. I have worked on low-income utility issues for nearly 30 years.

Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND.

A. After receiving my undergraduate degree in 1975 (Iowa State University), I obtained further training in both law and economics. I received my law degree in 1981 (University of

Florida). I received my Masters Degree (regulatory economics) from the McGregor School (Antioch University) in 1993.

Q. HAVE YOU EVER PUBLISHED ON PUBLIC UTILITY REGULATORY ISSUES?

A. Yes. I have published three books and more than 80 articles in scholarly and trade journals, primarily on low-income utility and housing issues. I have published an equal number of technical reports for various clients on energy, water, telecommunications and other associated low-income utility issues. A list of my professional publications is presented in Appendix A.

Q. HAVE YOU EVER TESTIFIED BEFORE THIS OR OTHER UTILITY COMMISSIONS?

A. Yes. I previously testified before the Manitoba Public Utilities Board in 2011 on low-income bill affordability issues. In addition, I have served as an expert witness before legislative, regulatory and judicial bodies on numerous occasions regarding energy, water and telecommunications issues affecting low-income customers. I have testified in regulatory proceedings in more than 30 states and various Canadian provinces on a wide range of low-income utility issues. Adjudicatory proceedings in which I have previously appeared as an expert witness are listed in Appendix A.

Q. PLEASE DESCRIBE YOUR PREVIOUS WORK IN CANADA.

A. Aside from my previous work with the Green Action Centre regarding Manitoba Hydro, my work in Canada involves primarily work in Ontario, Quebec and Nova Scotia. In Ontario, I work with a coalition of groups called the Low-income Energy Network ("LIEN"), as well as with a group called the Advocacy Centre for Tenants Ontario ("ACTO"). In the last several years, I have worked for LIEN/ACTO on the Ontario Energy Board's ("OEB") low-income consultation as well as on the OEB's rewrite of its customer service regulations; on the OEB's Fuel Assistance Working Group (FAWG); and on the issue of suite metering, both before the Ministry of Municipal Affairs and Housing and before the OEB. In Quebec, I have worked for Hydro Quebec doing research and preparing materials regarding possible structures through which to provide low-income affordability assistance. In Nova Scotia, I have worked with Dalhousie Legal Aide on a number of occasions regarding a low-income assistance program for Nova Scotia Power, Inc. ("NSPI").

Q. DO YOU WORK FOR THE UTILITY INDUSTRY AS WELL AS FOR NONPROFIT ORGANIZATIONS AND GOVERNMENT AGENCIES?

A. Yes. My workload has included projects for Xcel Energy (doing business as Public Service Company of Colorado). I have also routinely done work for Entergy Services Company, a major electric utility serving the Mid-South (Arkansas, Louisiana, Mississippi, Texas). In 2009, I was engaged in a major project for Tacoma Public Utilities ("TPU"), as well as for a consortium of Indiana utilities (Citizens Gas and Coke Utility, Northern Indiana Public Service Company, Vectren Energy Delivery). I have worked with Fitchburg Gas and Electric Company to develop data for their low-income energy efficiency programs. At present, I am part of a team that is developing customer assistance programs for the Water

Research Foundation (previously known as the American Water Works Association Research Foundation). In 2009, I authored a white paper for the Edison Electric Institute ("EEI") on the use of winter shutoff moratoria as a consumer protection device.

Q. OUTSIDE SPECIFIC PROGRAMS, HAVE YOU ENGAGED IN RESEARCH REGARDING LOW-INCOME ENERGY ISSUES?

A. Yes. Not all of my work involves specific programs or program proposals. I have been hired by state legislatures (e.g., the Colorado legislature). In addition, I was hired by the U.S. Department of Health and Human Services to develop the Home Energy Insecurity Scale, a mechanism which is now frequently used to measure the outcomes of low-income programs. Each year, I develop the standard utility allowance ("SUA") to be used by the states of Iowa, Wisconsin and Illinois in their state administration of the federal Food Stamp program (now known as the Supplemental Nutrition Assistance Program, SNAP).

I authored a study of the health impacts of unaffordable home energy for the Iowa Department of Human Rights based on data from the Iowa Department of Public Health's Behavioral Risk Factor Surveillance System ("BRFSS") survey. I undertook a study of the public safety impacts of unaffordable home energy for the National Fuel Funds Network. I undertook a study of the educational impacts of unaffordable home energy for Missouri's state association of Head Start providers. I undertook studies of the impact that unaffordable home energy has on the affordability of housing in Pennsylvania and in Colorado. I undertook studies of the economic development impacts of promoting affordable home

energy for Energy Outreach Colorado and for Entergy Services Company (throughout its multi-state service territory).

Q. PLEASE EXPLAIN THE PURPOSE OF YOUR TESTIMONY TODAY.

A. I have been asked by GAC to consider and comment on the following issues for Manitoba Hydro:

- Whether Manitoba Hydro has engaged in a reasonable and prudent management response to the inability-to-pay of a substantial number of the Company's residential customer population;
- What utility-related operational impacts, if any, would be expected to be generated by the adoption of a bill affordability program in Manitoba;
- Whether alternative bill affordability mechanisms will generate benefits to the province of Manitoba in its governmental capacity and in its capacity as owner of Manitoba Hydro;
- Whether alternative bill affordability mechanisms will generate benefits to participating households above and beyond their capacity as utility customers; and
- Whether alternative bill affordability mechanisms exist from which a collaborative process might devise a bill affordability mechanism, as a part of a suite of inability-to-pay responses, to serve the interests of both the Company's low-income customers and the Company's non-participating customers.

I have been asked by GAC to present a process through which an appropriate Made-in-Manitoba bill affordability program could be developed.

Q. PLEASE SUMMARIZE YOUR FINDINGS.

A. Based on the data and analysis I present and discuss below, I conclude as follows:

- Manitoba Hydro exhibits substantial and deteriorating payment problems, the most intractable of which are associated with low-income inability-to-pay customers.

- Existing Manitoba Hydro credit and collection planning and activities do not reasonably and prudently address the inability-to-pay problems reflected in the payment patterns facing the utility.

- Bill assistance limited to providing emergency crisis assistance does not meet the needs of low-income inability-to-pay customers.

- Energy efficiency and fuel switching, such as the Manitoba Hydro Affordable Energy Program ("AEP"), while a necessary component of any cost-effective response to inability-to-pay, is not a sufficient stand-alone response.

- The implementation of an appropriately designed and well-implemented ongoing targeted bill affordability program can have positive impacts on the payment patterns and practices of low-income inability-to-pay customers.

- Sufficient experience and learning exists from which a multi-stakeholder collaborative process can draw to develop a Made-in-Manitoba bill affordability program.

- The issue of how to implement an ongoing bill affordability program for Manitoba Hydro should be subject to a multi-stakeholder collaborative process under the mediation direction of PUB Staff.

- Upon completion of the collaborative process, a Final Collaboration Report should be submitted to the Board, stating therein the areas of agreement between parties on how to implement a bill affordability program, along with an identification of the areas of disagreement.

- Upon receipt of the Final Collaboration Report, the Board should initiate further proceedings, the precise structure to be determined at the time based on the nature and extent of disagreements, to resolve the disagreements.

Part 1. Manitoba Hydro's Ineffective and Inefficient Response to Inability-to-Pay.

A. Introduction and Overview.

Q. CAN YOU PROVIDE SOME BRIEF CONTEXT FOR THE DISCUSSION YOU ARE ABOUT TO PRESENT?

A. There are two ways to view a low-income bill affordability program. On the one hand, one can approach such a program in the way in which Manitoba Hydro continues to view such a program, as a social assistance program that has no place in a public utility's toolbox of responses to inability-to-pay. This perspective is reminiscent of the attitudes of public utility management 20 (or more) years ago toward utility investments in energy efficiency measures. That attitude counseled an out-of-hand rejection of utility investments in energy efficiency, reasoning that "we're in the business to sell energy. Our job is not to convince customers to avoid buying our product." It is an attitude which, of course, today is considered to be totally unfounded (and unreasonable).

On the other hand, one can approach a low-income program from the perspective such as that articulated by the Pennsylvania Public Utility Commission ("PUC"), that state's utility regulatory commission. The decision to implement what would become known as Pennsylvania's Customer Assistance Programs ("CAPs") arose not out of an investigation into low-income assistance, but rather out of the PUC's investigation into

the control of uncollectible accounts.[1] Through that investigation, the Pennsylvania PUC's Bureau of Consumer Services ("BCS") developed recommendations for implementation of CAPs as an alternative to traditional collection methods for low-income, payment-troubled customers. Customers enrolled in a CAP agree to make monthly payments based on household family size and gross income. These regular monthly payments, which may be for an amount that is less than the current bill, are made in exchange for continued provision of utility service.[2]

In endorsing the implementation of CAPs, the Pennsylvania PUC stated:

> the results of two impact evaluations show that CAPs support the principles found in the CAP Policy Statement, namely that an appropriately designed and well-implemented CAP, as an integrated part of a company's rate structure, is in the public interest. Further, the results show that CAPs can be a more cost effective approach for dealing with issues of customer inability to pay than traditional collection methods.[3]

The Pennsylvania CAPs, in other words, were initiated when the PUC found that CAPs should be an "integrated part of a company's rate structure." The purpose of these programs, the Commission found, was not a social purpose. Rather, the PUC found that the CAPs represent "a more cost-effective approach for dealing with issues of customer inability-to-pay than are traditional collection methods."

[1] In the Matter of the Investigation into the Control of Uncollectible Accounts, Docket No. I-900002 (initiated October 11, 1990).
[2] Pennsylvania PUC. Revisions to Customer Assistance Program Policy Statement, Docket No. M-00991232 (April 9, 1999), referencing Policy Statement on Customer Assistance Programs (CAP), Docket No. M-00920345 (July 2, 1992).
[3] Id., at 2. This Commission decision was supported by the BCS Final Report on the Control of Uncollectible Accounts. That report stated: "The Bureau's position is that ratepayers are already bearing significant costs attributable to the problems of payment troubled customers and uncollectible balances. Further, BCS believes that incorporating the following recommendations into utility operations will lead to a more rational and cost effective use of existing resources. Over time, proper implementation of the recommendations may result in a reduction of total utility costs." BCS Uncollectibles Report, at 120.

Q. WHAT CHANGE IN THINKING OCCURRED WITH THE PENNSYLVANIA PUC?

A. Just as utilities found, after setting aside their ideological opposition to investment in usage reduction strategies, that energy efficiency investments could be a lesser cost way of delivering service than simply producing ever-increasing amounts of energy, the Pennsylvania PUC found that bill affordability programs could be a lesser cost way to address inability-to-pay. As the PUC found:

> We, in conjunction with utilities, and social service agencies, have all worked hard to devise ways to [e]nsure that low-income Pennsylvanians have utility services which really are necessities of life as the tragic fire deaths associated with the loss of utility service underlined. . . However, for the poorest households with income considerably below the poverty line, existing initiatives do not enable these customers to pay their bills in full and to keep their service. . .Consequently, to address realistically these customers' problems and to stop repeating a wasteful cycle of consecutive, unrealistic payment agreements that cannot be kept, despite the best of intentions, followed by service termination, then restoration, and then more unrealistic agreements, we believe that new approaches like PECO's CAP program and the OCA's proposed EAP program should be tried.[4]

The Pennsylvania PUC reached its conclusion 25 years ago. Since that time, the PUC's analysis has been empirically confirmed and upheld time and time again in every jurisdiction that has adopted and empirically evaluated such a program. No longer is the Pennsylvania PUC's decision based on mere expectations; the conclusions reached by the Pennsylvania PUC in 1990 are based on solid empirical work over numerous jurisdictions and multiple program designs.

[4] Pennsylvania Public Utility Commission v. Columbia Gas of Pennsylvania, R-891468, Final Order, at 159 (September 19, 1990).

Given the state of knowledge today, it is no longer reasonable to avoid incorporating a bill affordability program into a utility's rate schedule on the grounds that it is a "social program" that is outside the purview of a public utility. Rather, it is unreasonable to avoid pursuing such a program as a part of the utility's cost-effective, efficient, just and reasonable rate structure. The question should be *how* to structure a program, not *whether* to structure a program.

B. The Unreasonableness of Manitoba Hydro's Inability-to-Pay Operations.

Q. PLEASE DESCRIBE THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY.

A. In this section of my testimony, I review whether Manitoba Hydro is operating reasonably and prudently in responding to inability-to-pay problems on its system. The need to operate in a reasonable and prudent fashion is not exclusively for the benefit of those customers facing an inability-to-pay. It is for the benefit of all ratepayers. Not only are the customers who face an inability-to-pay harmed by the Company's lack of reasonable and prudent actions, but *all* customers are. My review is based on the following fundamental planning questions that would apply to any utility activity:

1. Does Manitoba Hydro engage in basic proactive planning processes?
2. Does Manitoba Hydro establish outcome performance standards for its processes and review the results/outcomes of its existing processes against those performance standards?
3. Does Manitoba Hydro adapt its processes when its processes do not generate positive outcomes as measured by its performance standards?

4. Does Manitoba Hydro reasonably integrate its internal programs and procedures?
5. Does Manitoba Hydro generate reasonable outcomes through its processes?
6. Are consumers harmed by Manitoba Hydro's lack of reasonable and prudent operations?

After considering those questions, I conclude with some general observations about Manitoba Hydro's actions (and inactions) in responding to the inability-to-pay of a substantial proportion of Manitoba Hydro customers.

(1) Basic Proactive Programmatic Planning.

Q. PLEASE DESCRIBE THE STANDARD OF REASONABLE AND PRUDENT OPERATIONS THAT YOU APPLY IN THIS SECTION OF YOUR TESTIMONY.

A. To operate as a reasonable and prudent utility, Manitoba Hydro should engage in a planning process to determine an appropriate response to inability-to-pay. Without such a planning process, through which the Company would identify existing problems, develop responses, determine performance metrics, and establish a feedback process to measure actual performance against expected (or desired) performance, the Company's responses to inability-to-pay would be precisely as indeed currently exist: haphazard, lacking both strategic and operational direction, and based almost exclusively on supposition. Manitoba Hydro fails to engage in a reasonable and prudent planning process from a programmatic perspective.

Q. PLEASE IDENTIFY THE BASIS FOR YOUR CONCLUSION THAT MANITOBA HYDRO LACKS A REASONABLE AND PRUDENT PROGRAMMATIC PLANNING PROCESS REGARDING INABILITY-TO-PAY.

A. Manitoba Hydro has failed to engage in any planning process and failed to develop any methodology or procedure to identify vulnerable customers on its system. (GAC/MH-1-57). Manitoba Hydro has done no work to "systematically review, study or assess the records of vulnerable residential customers to determine patterns of payment or other behavior that will be used to determine appropriate customer service actions by the Company." (GAC/MH-I-58). Nor has Manitoba Hydro engaged in any planning to characterize patterns of nonpayment; identify the characteristics of nonpayers; identify predictors of nonpayment; or to identify early indicators of nonpayment. (GAC/MH-59(a), (b), (c) and (e); GAC/MH-17(b); GAC/MH-I-29).[5]

The Company has engaged in no customer segmentation study for purposes of determining the causes of, and appropriate responses to, inability-to-pay. The one document that Manitoba Hydro presents as a "customer segmentation" study –the Energy Use Survey Report-- had as its "main objective" to "incorporate the findings into the annual Manitoba Hydro Load Forecast." (GAC/MH-I-46). Not a single "key finding" from the "Energy Use Survey Report" (pages i – viii) relates to residential inability-to-pay or how energy consumption levels might affect inability-to-pay. Not a single question in the "questionnaire booklet" for the "Energy Use Survey Report" (Section 14.0, Appendix) relates to inability-to-pay or to any other payment patterns. Not a single

[5] Not one single paragraph of the Monticello Consulting Group report, prepared as part of the Predictive Analytics Information Technology Project, is devoted to any of these aspects of nonpayment. (GAC/MH-I-17(b)).

question was asked concerning programs or processes designed to respond to inability-to-pay (or to nonpayment generally). Not a single question was asked about customer payment practices. No demographic survey has been prepared (GAC/MH-I-47) outside of the Company's Residential Use Survey Report. The Company explicitly and unabashedly concedes that it collects no demographic data to better understand its customers or to better assess how to serve its inability-to-pay customer base. (MKO-Coalition/MH-I-2(c)) ("Manitoba Hydro does not collect demographic information on customers in arrears").

Given these failures, it is thus not surprising that the Company's own review by Monticello Consulting Group (GAC/MH-1-17(b)) devoted not one sentence to using information developed in the Company's Residential Use Survey Report.[6] Nor did Monticello devote one sentence of its report to using information presented either in the Manitoba Hydro 2011 Lower Income Energy Efficiency Program Customer Survey (GAC/MH-I-55(d)) or from the development of the External Review of the Affordable Energy Program (GAC/MH-I-35(a)).

To be fair, Manitoba Hydro did recognize a problem and called on Monticello Group to recommend measures to improve the Company's performance in accounts receivable management, although this consultation completely ignored ability-to-pay solutions. (GAC/MH-I-17(b)).

[6] The purpose of the Monticello Group report was to work with the Company's Predictive Analytics Information Technology Project to improve the Company's performance in accounts receivable management. GAC/MH-I-17(b).

Similarly, Manitoba Hydro has engaged in no planning process, outside its energy efficiency programming, directed toward responding to inability-to-pay, either through energy assistance or customer service initiatives. (GAC/MH-I-36(b) – (c)). Even the energy efficiency planning report provided by Manitoba Hydro (GAC/MH-I-36(a))[7] not even once considers the need for, impacts on, or implications of, energy efficiency programming as a response to inability-to-pay.

Q. HAS MANITOBA HYDRO ENGAGED IN ANY PLANNING TO DETERMINE THE EXTENT TO WHICH, IF AT ALL, ITS EXISTING RESIDENTIAL COLLECTION PROCESSES ARE GENERALLY APPROPRIATE?

A. No. While Manitoba Hydro can (and did) provide the procedures it uses to disconnect and reconnect service, it has no planning document that has assessed the circumstances under which termination of service is appropriate or inappropriate. (GAC/MH-I-50). Manitoba Hydro admits that it has no idea of when the termination of service is a cost-effective response to non-payment. (GAC/MH-I-22).

Similarly, while Manitoba Hydro asserts that its Equal Payment Plan ("EPP") "provides a convenient method of payment" (GAC/MH-I-14), and has processes for how to establish such an EPP, it has engaged in no planning to determine whether or when it is appropriate or inappropriate to place a customer on an Equal Payment Plan (GAC/MH-I-53), let alone to assess the impacts of EPPs on inability-to-pay.

[7] The 2014 – 2017 Power Smart Plan referenced in response to GAC/MH-I-36 was provided as Appendix 8.1 of the Application for this general rate increase.

Q. DOES MANITOBA HYDRO HAVE ANY BASIS FOR ASSESSING OR ASSERTING THE EFFECTIVENESS OR EFFICIENCY OF ITS EXISTING COLLECTION PROCESSES DIRECTED TOWARD NONPAYMENT?

A. No. For example, other than "regularly monitoring industry practices. . .to ensure its practices are generally consistent with those practices deployed by other utilities and other similar types of service industries" (i.e., "we do what everyone else does"),[8] Manitoba Hydro has established no criteria by which to assess on an ongoing basis the effectiveness of its current credit and collection activities. (GAC/MH-I-17(a)). For example, Manitoba Hydro has no basis to document the effectiveness of imposing late payment charges as an incentive for residential customers to pay. (GAC/MH-I-13).

The Company has no studies, either using its own data or using data from any other utility, that even *considers* the extent to which any of the following activities reduce residential bad debt, let alone *documents* or *demonstrates* that any of the following activities reduce residential bad debt: cash security deposits; deferred payment agreements; disconnections for nonpayment; field collections; call center collection calls; budget billing plans; or late payment charges. (GAC/MH-I-18(a) – (g)).

Nor does the Company have any studies, either using its own data or using data from any other utility, that even *considers* the extent to which any of the following activities reduce residential arrears, let alone *documents* or *demonstrates* that any of the following activities reduce residential arrears: cash security deposits; deferred payment agreements;

[8] Of course, Manitoba Hydro falls far short of doing what other utilities do with respect to responding to inability-to-pay. See, note 71, infra, and accompanying text.

disconnections for nonpayment; field collections; call center collection calls; budget billing plans; or late payment charges. (GAC/MH-I-19(a) – (g)).

(2) Establishing and Applying Performance Standards.

Q. PLEASE DESCRIBE THE STANDARD OF REASONABLE AND PRUDENT OPERATIONS THAT YOU APPLY IN THIS SECTION OF YOUR TESTIMONY.

A. One critical element of reasonable and prudent management is to establish and exercise a feedback loop by which to evaluate programmatic activities. Creating a feedback loop involves articulating performance criteria; identifying metrics that will measure performance; monitoring performance using those metrics; assessing actual performance relative to the articulated performance criteria; and determining the changes, if any, that need to be made should actual performance not meet the expected or desired performance.

After reviewing Manitoba Hydro's planning processes regarding its responses to inability-to-pay, I conclude that Manitoba Hydro has engaged in none of these fundamental activities that would underlie reasonable and prudent utility management of inability-to-pay customers.

Q. PLEASE EXPLAIN THE BASIS FOR YOUR CONCLUSION THAT MANITOBA HYDRO HAS ESTABLISHED NO PERFORMANCE CRITERIA.

A. Manitoba Hydro specifically states that it establishes no performance criteria ("Manitoba Hydro does not set performance targets for debt prevention") (GAC/MH-56(a)). And

while the Company states that it "regularly compiles data for the purposes of monitoring debt prevention activities," it concedes that the data "would not be meaningful outside of the direct operational areas." (GAC/MH-I-56(a)).

Not only does Manitoba Hydro not set performance criteria for ***debt prevention***, neither does it set performance criteria for ***debt management*** ("Manitoba Hydro does not set specific performance targets for debt management") (GAC/MH-I-56(b)). The Company concedes that it does not have performance targets that it seeks to meet within the next year, two years or three years with respect to either debt prevention or debt management. (GAC/MH-I-56).

This failure to establish performance targets is not surprising given that the Company concedes that it has not considered, let alone determined, whether any of its credit and collection, or customer service, activities have ***any*** impact on reducing either residential bad debt (GAC/MH-I-18) or residential arrears (GAC/MH-I-19). If you have no expectations, there is no basis upon which to set performance standards.

Manitoba Hydro's failure is particularly acute with respect to vulnerable customers. Manitoba Hydro's failure (or refusal) to consider establishing performance indicators for the treatment of vulnerable customers (GAC/MH-I-55(c) and GAC/MH-I-56(c)) is entirely consistent with its failure (or refusal), as I describe in detail above, to devote any effort to understanding the payment characteristics and payment patterns of such

consumers, the factors that contribute to those payment patterns, or the customer service responses that might affect those payment patterns.

Q. PLEASE EXPLAIN WHETHER MANITOBA HYDRO HAS ESTABLISHED ANY METRICS BY WHICH TO MEASURE WHETHER ITS RESPONSE(S) TO NONPAYMENT AND INABILITY-TO-PAY REPRESENT AN EFFECTIVE, LET ALONE A COST-EFFECTIVE, RESPONSE.

A. Manitoba Hydro has conceded that it has no information upon which to base any measurement of the effectiveness of its responses to nonpayment and inability-to-pay. It has no information to determine whether its responses either reduce residential bad debt (GAC/MH-I-18) or even reduce residential arrears (GAC/MH-I-19). Manitoba Hydro concedes that it "does not measure the number of avoided disconnections for non-payment as part of program measurement" for the customer service activities it lists. (GAC/MH-I-42). Nor does it measure the extent to which any of its activities reduce the number of delinquent residential accounts. (GAC/MH-I-43).

Manitoba Hydro's failure to set performance criteria, along with Manitoba Hydro's failure to attempt to collect and assess any data on metrics that might provide insights into performance, is entirely consistent with its management philosophy that it seeks only to do what it perceives other utilities to be doing with respect to responding to non-payment and inability-to-pay. (GAC/MH-I-13). Despite this desire to do what everyone else is doing, however, the Company concedes that "Manitoba Hydro does not possess any benchmarking studies on revenue collection or revenue protection." (GAC/MH-I-61).

Manitoba Hydro has no idea, in other words, of how those other utilities are performing, or of how Manitoba Hydro is performing relative to those other utilities.

Manitoba Hydro has chosen not to review any of the available research on using bill affordability as a response to inability-to-pay. (GAC/MH-I-32) (see also, note 71, infra).

In sum, when it comes to responding to nonpayment and inability-to-pay, not only does Manitoba Hydro not know (or make any effort to determine or measure) how it is performing relative to its own internally-established performance standards, it does not know (or make any effort to determine or measure) how it is performing relative to other national, regional or sized-based peer electric companies.

(3) Acknowledging Deteriorating Payment Outcomes.

Q. PLEASE DESCRIBE THE STANDARD OF REASONABLE AND PRUDENT OPERATIONS THAT YOU APPLY IN THIS SECTION OF YOUR TESTIMONY.

A. In this section of my testimony, I review the data that Manitoba Hydro has provided regarding the residential payment outcomes that it has experienced. I find that the Company's collections outcomes continue to deteriorate.

Q. PLEASE EXPLAIN WHY YOU CONCLUDE THAT MANITOBA HYDRO'S PAYMENT PATTERNS ARE DETERIORATING.

A. Manitoba does not even track payments for the residential class. When asked when residential payments were made, the Company responded that "payments for residential

accounts are not segregated from other payments." (GAC/MH-I-4(a) – (d)). The Company could only provide information "for electric accounts." (Id.) Having noted that limitation, it is still evident that payment patterns for the Company deteriorated from 2012 through 2014.

Fewer and fewer payments are being made on time. Ideally, a utility wants 100% of its payments to be made on time. The further and more frequently the percentage of payments being made on time falls below 100%, the worse the collection performance. For Manitoba Hydro, in 2012, the rate of on-time payments fell to 82% in zero months. By 2014, however, there were three months in which only 80% - 82% of electric payments were current.

In contrast, the older an arrearage, the worse the collection performance. An arrearage that is 60-days (or more) old is a greater collection threat than an arrearage that is 30-days old. For Manitoba Hydro, in 2012, there were no months in which 4% or more of electric payments fell into the 60-day arrears aging bucket. By 2014, there were four months when 4% or more of all electric accounts fell into the 60-day (or older) aging bucket.

Both of these sets of data show a degradation in the extent to which electric account holders make timely Manitoba Hydro bill payments.

Other Manitoba Hydro also data reflects this same trend. For example, Schedule RDC-1 presents data on the total dollars of residential arrears by month for the years 2012 and

2014.[9] For heating accounts in particular, the total dollars of residential arrears has dramatically increased. The percentage *increase* in the months of February through August ranged from more than 20% to nearly 40% from 2012 to 2014.[10] The dollars of increase ranged from nearly $2.0 million to nearly $5.0 million a month. While the increase was not so dramatic for non-heating accounts, residential arrears increased in five of the eleven reporting months, as well as on an average total annual basis.

Moreover, Schedule RDC-2 presents data, by month for the years 2012 and 2014, on the total number of active residential accounts with arrears exceeding $1,000. On an average annual basis, more residential accounts (both heating and non-heating) *each month* carried an arrears exceeding $1,000.[11] On an average monthly basis in 2014, nearly 3,200 active residential customers a month carried arrears of greater than $1,000, while nearly 1,900 active residential customers carried arrears over $1,500 each month.

The degradation in collections discussed here is further confirmed by other data provided by Manitoba Hydro. From 2012 to 2014,[12] the percentage of residential accounts in arrears having arrears exceeding $800 crept up from 41.9% to 42.3%; the percentage that had arrears that had greater than $1,000 increased from 36.2% to 36.7%; the percentage that had arrears greater than $1,500 increased from 26.2% to 26.8%; the percentage of residential accounts in arrears that had arrears greater than $2,000 increased from 19.2%

[9] January 2012 data was not available.
[10] January 2012 data was not available.
[11] The total number of active residential heating customers with arrears exceeding $1,000 was 1,920 in 2012 and 2,445 in 2014, a growth of 525.
[12] Since Manitoba Hydro did not report January 2012 data, the comparison is of February through December 2012 to February through December 2014.

to 19.7%. (GAC/MH-I-2, citing MMF/MH-I-45(a)).[13] In absolute dollar terms, the average monthly number of residential accounts with arrears greater than $1,000 increased from 2,633 in 2012 to 3,189 in 2014; the average monthly number of residential accounts with arrears greater than $1,500 increased from 1,570 in 2012 to 1,890 in 2014; the average monthly number of residential accounts with arrears greater than $2,000 increased from 1,064 in 2012 to 1,260 in 2014.

In short, Manitoba Hydro is experiencing a significant and continuing deterioration in payment performance.

(4) Adapting in Light of the Lack of Positive Performance.

Q. PLEASE DESCRIBE THE STANDARD OF REASONABLE AND PRUDENT OPERATIONS THAT YOU APPLY IN THIS SECTION OF YOUR TESTIMONY.

A. In this section of my testimony, I review how Manitoba Hydro has responded to its continuing deterioration in residential payment performance. One attribute of reasonable and prudent management is not simply to measure the outcomes of your internal processes, but also to adapt those processes when performance falls short. Even though Manitoba Hydro falls woefully short in this management process from the very beginning, in failing to even establish performance standards, as I describe below, the Company also engages in unreasonable action by failing to respond to its deterioration in residential payment performance by adapting its processes.

[13] This data did not distinguish between heating and non-heating accounts.

Q. GIVEN THE DETERIORATION IN RESIDENTIAL COLLECTIONS PERFORMANCE, HOW HAS THE COMPANY RESPONDED?

A. Manitoba Hydro has responded to its deterioration in residential collections by insisting that inability-to-pay is a "social" problem that is solely within the purview of the government and that inability-to-pay is not its concern. As a result, Manitoba Hydro has responded to its deterioration in performance by simply doing more of the same of what it has always done before.

For example, even though the Company concedes that it has no basis to know that the imposition of late payment charges reduces either residential bad debt (GAC/MH-I-18(g)) or residential arrears (GAC/MH-I-19(g)), the Company has increased the extent to which it imposed late payment fees. (GAC/MH-I-5(a) – 5(b)). The Company increased the number of residential accounts on which it imposed a late payment charge from roughly 77,000 to roughly 84,000 each month from 2012 to 2014, increasing its annual late payment charge revenue billed from $2.6 million a year to more than $3.1 million a year. (GAC/MH-I-5(a)). The Company admits that it only tracks when its late fees are applied, not when (if at all) such fees are actually collected. (GAC/MH-I-5(a) – 5(b)).

The Company imposes these late payment charges even though it has made no effort to cost-justify them. (GAC/MH-I-6(a), ("No cost justification has been filed by Manitoba Hydro with respect to late payment fees. . ."). Nor does Manitoba Hydro have any basis to conclude that imposing late payment charges effectively operates as an incentive for residential customers to pay more completely or in a more timely fashion. (GAC/MH-I-

13(a) ("Manitoba Hydro has not conducted a formal study nor is it aware of any external studies specifically documenting the effectiveness of late payment charges as an incentive for residential customers to pay").

Q. HOW ELSE HAS MANITOBA HYDRO RESPONDED TO THE DETERIORATION IN ITS RESIDENTIAL COLLECTIONS?

A. Even though the Company has no basis to conclude that deferred payment plans are an effective strategy by which to reduce either residential bad debt (GAC/MH-18(b)) or residential arrears (GAC/MH-I-19(b)), the Company continues to rely almost exclusively on residential deferred payment plans as its response to inability-to-pay. And the Company continues to enter into payment plans that have as much chance of failing as succeeding. In 2012, while Manitoba Hydro entered into an average of 11,677 new payment plans each month, 5,937 (51%) of those payment plans defaulted (GAC/MH-I-38). By 2014, while Manitoba Hydro entered into an average of 12,524 payment plans each month, fully 6,314 (50%) each month defaulted.[14]

In both 2012 and 2014, more payment plans defaulted than succeeded. And still, Manitoba Hydro continues to do exactly as it has done in the past. The Company's payment plans are much more successful for customers who only need a brief extension on their payment; they are singularly unhelpful for customers whose ability-to-pay prevents them from retiring an arrearage within a month or less. (GAC/MH-I-38(h) – 38(i)).

[14] That does not mean that the rest succeeded. Many plans simply had not reached a conclusion, successful or otherwise.

Manitoba Hydro overstates the "flexibility" in structuring deferred payment arrangements it claims to provide to meet the specific needs of individual customers (MMF/MH-I-34). ("Manitoba Hydro's Credit & Recovery Services Department engages in many activities that allow flexibility in negotiating payment plans that take into consideration the customer's ability to pay"). In 2014, the Company entered into 150,285 new deferred payment arrangements. (GAC/MH-I-38(f)). Of those, only 2,014 (1.3%) were for a term longer than six months. Indeed, only 13.6% (20,425) were for a term longer than *one* month. (GAC/MH-I-38(f)).

The Company's deferred payment arrangements are certainly not structured to address the inability-to-pay customer. The average payment plan payment toward arrearages due under the Company's payment plans in 2014 ranged from a low of $277 per month (for DPAs newly entered into in November) to a high of $371 (for DPAs newly entered into in March). (GAC/MH-I-38(e)). This average payment toward arrearages is *in addition to* the average monthly bill for current service. For all residential customers (not residential customers in arrears, who are customers that tend to have higher-than-average bills), the additional payment for current usage for non-heating customers would range from a low of $56 a month (May – June), to a high of $74 - $80 a month (GAC/MH-I-7(a)). The additional payment for current usage for heating customers would range from a low of $73 a month (August – September) to a high of $200 - $211 a month (December – February). (GAC/MH-I-7(a)). Given these payment obligations under the Company's

payment plan terms, it is not surprising that more deferred payment arrangements fail than succeed.

Q. DO YOU HAVE ANY FINAL OBSERVATION ABOUT THE COMPANY'S RESPONSE TO INABILITY-TO-PAY?

A. Yes. Even though the Company has no basis to conclude that the disconnection of service for nonpayment is an effective strategy by which to reduce either residential bad debt (GAC/MH-I-18(c)) or residential arrears (GAC/MH-19(c)), the Company continues to increase the rate at which it issues notices of disconnection of residential service in bulk. In the ten months of March through December 2014, Manitoba Hydro issued 16% more notices of disconnection than it did in the equivalent 10-month period in 2013.[15]

Despite its expanded use of disconnect notices, the Company experiences a noticeable lack of success in generating customer payments in response to such notices. Schedule RDC-3 shows that the average monthly number of accounts that were not disconnected even though they continued to carry arrears of sufficient size (or age) to trigger a disconnection increased from 8,400 (2013) to 8,600 (2014). Indeed, the average monthly number of accounts that responded to the receipt of a disconnect notice by making *no* payment prior to the issuance of the next bill increased from 1,700 (2013) to nearly 2,050 (2014). Similarly, Schedule RDC-3 shows a 30% increase in the number of accounts responding to the receipt of a disconnect notice by making less than a full payment.[16]

[15] Since data only began in March 2013, the 2014 data is limited to the same 10 month period (March – December) to keep the data comparable.

[16] Even with these payments, what is unknown, and unknowable, is how many of those payments would have been made even if no notice of disconnection would have been issued.

In sum, in response to its continuing deterioration in performance, Manitoba Hydro has simply continued to do more of what it has always (ineffectively) done before.

(5) Lack of a Coordinated Response.

Q. PLEASE DESCRIBE THE STANDARD OF REASONABLE AND PRUDENT OPERATIONS THAT YOU APPLY IN THIS SECTION OF YOUR TESTIMONY.

A. In this section of my testimony, I examine the extent to which Manitoba Hydro seeks to coordinate and integrate its various activities, limited though they may be, directed toward low-income payment–troubled customers. There is a noticeable lack of coordinated effort to address residential inability-to-pay.

Q. HAVE YOU EXAMINED THE COORDINATION BETWEEN NEIGHBORS HELPING NEIGHBORS ("NHN") AND THE AFFORDABLE ENERGY PROGRAM (FORMERLY THE LOW-INCOME ENERGY EFFICIENCY PROGRAM, LIEEP)?

A. There is virtually no coordination between Neighbors Helping Neighbors ("NHN") and the Company's Affordable Energy Program ("AEP") (formerly known as the Low-Income Energy Efficiency Program, or "LIEEP"). From the 2011/2012 program year through the 2014/2015 program year (through December 2014), AEP served 6,914 participants (GAC/MH-I-33(c)). During that same four year period, the *total* number of AEP participants who *also* received assistance from NHN in the same year as having received AEP assistance reached eighteen (18). (GAC/MH-I-33(d)). The figure of 18 is not an annual figure; it is the aggregate figure over four years.

This figure (18 of 6,914) indicates a clear lack of coordination between the two programs. Even if one eliminates the requirement that NHN and AEP assistance be provided in the same year, only 62 customers have received both NHN and AEP assistance at *any* time. (GAC/MH-I-33(f)). The two programs combined have had an unduplicated participation of 15,856 (GAC/MH-I-33(e)) from 2011/2012 through 2014/2015.

The fact that the total overlap between NHN and AEP is only 62 customers (only 18 of which received both NHN and AEP assistance in the same year) is even more surprising because Manitoba Hydro asserts that:

> The Affordable Energy Program (AEP), targeted to lower income customers, is one program in particular which directly markets to residential customers in arrears through an autodialer call campaign to promote program participation. In addition, staff working on credit and collection activities also refer customers to this program.

(GAC/MH-I-42).[17] The Company's "auto-dialer call campaign" and staff "referrals," in other words, have missed the coordination of the two programs in 15,794 (99.6%) of the 15,856 potential cases.[18]

[17] Indeed, the Company asserts: (1) that the group of "customers who struggle to pay their bills" "is a primary target for Manitoba Hydro's Affordable Energy Programs"; and (2) that Manitoba Hydro is "using its automated outbound calling to promote its Affordable Energy Program to customers who are currently in arrears in order to reach as many potential program participants as possible." (MMF/MH-I-34) (emphasis added). Given Manitoba Hydro's success in reaching a total of 62 of the 15,856 payment-troubled, customers over-lapping between NHN and AEP over the course of four years, it would be hard to imagine what Manitoba Hydro's performance would have been had it not been trying to "reach as many potential program participants as possible."

[18] By design, the Affordable Energy Program is directed exclusively to low-income homeowners. (Coalition/MH-I-69, at 11). ("The program's objective is to assist lower income homeowners in implementing energy efficiency upgrades").

Moreover, the "residential notice of disconnection" in the middle of the warm weather months (August 2014) is identical to the notice of disconnection in the middle of the cold weather months (January 2015). (GAC/MH-I-37(b) and 37(d)).

Finally, while Manitoba Hydro touts its customers' "overall" satisfaction with the Company (Coalition/MH-6(c) - 6(d)), the Company avoids measuring customer satisfaction when customers specifically make contact with the Company seeking to solve payment difficulties in individual cases. When asked to provide "the results of any call center satisfaction transactional research survey (e.g., "point of contact" survey, "moment of truth" survey) performed within the immediately preceding 36 months," along with "an explanation of how the Company uses the results of this survey to improve service to its customers," Manitoba Hydro admitted that it "has not undertaken a call center satisfaction transactional survey within the last 36 months." (GAC/MH-I-60).

Q. PLEASE SUMMARIZE THE SITUATION THAT YOU FIND WITH MANITOBA HYDRO'S LACK OF COORDINATION OF ACTIVITIES.

A. In summary, the situation presented by Manitoba Hydro is that the Company has made no effort to develop a methodology, process or procedure to identify vulnerable customers. (GAC/MH-I-57). The Company has made no effort to review, study or assess residential billing and/or payment records in an effort to identify patterns of nonpayment or characteristics of nonpayers. (GAC/MH-I-59). Even though the Company says it is striving to contact 'customers who are in arears to reach as many potential program participants as possible' (MMH/MH-I-34), the Company has missed referring payment-

troubled customers to crisis assistance and usage reduction programs in 99.6% (15,794 of 15,856) of the confirmed cases since 2011/2012. And the Company makes no efforts, after the fact, to determine whether customers who have contacted the call center to work-out specific problems (e.g., entering into a deferred payment arrangement to address an arrearage, or to prevent a disconnection for non-payment), are satisfied with their experience, so that such transactional information can be used to improve the customer service offered. (GAC/MH-I-60).

In the opinion of Manitoba Hydro, inability-to-pay is simply not the Company's problem. It instead adheres to its strict ideology that "Manitoba Hydro notes that a customer's 'ability to pay' is not a consideration in the structuring of rates for each customer class. It is not an energy usage characteristic and given that the cost of serving customers is determined by customer count and usage characteristics, it is not a variable that is considered in the calculation of rates." (MMF/MH-I-42).[19]

[19] This Manitoba Hydro ideology is at odds with judicial precedent in Canada. In the 2008 decision in Action Centre for Tenants Ontario (ACTO) v. Ontario Energy Board, Court File No. 273/07 (May 6, 2008), the Divisional Court of the Ontario Superior Court of Justice, rejected just such an argument. In a 2-1 decision in a general rate case involving Enbridge Natural Gas Company (Docket No. EB-2006-0034), the Ontario Energy Board determined that its statutory authority "does not explicitly grant to the Board jurisdiction to order the implementation of a low income affordability program." The Court noted that the Board had held, in language similar to that advanced by Manitoba Hydro, that such an affordability program "amounted to an income redistribution scheme. The Board noted that such a scheme would require a consumer rate class based on income characteristics and would implicitly require subsidization of this new class by other rate classes." The Court disagreed, holding that "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.'" The Court could not have been more direct when it held "in our view, and we so find, the Board has the jurisdiction to take into account the ability to pay in setting rates." The Court said that "the jurisdiction to consider ability to pay in rate setting is explicitly within the Act. . ."

(6) Substantial Consumer Harm.

Q. PLEASE DESCRIBE THE STANDARD OF REASONABLE AND PRUDENT OPERATIONS THAT YOU APPLY IN THIS SECTION OF YOUR TESTIMONY.

A. In this section of my testimony, I describe why the lack of reasonable and prudent Company action in responding to inability-to-pay imposes substantial harms on Manitoba Hydro consumers. Harm arises both to those consumers who have an ability-to-pay and to those consumers who have an *in*ability-to-pay.

Q. PLEASE DESCRIBE HOW THE COMPANY'S LACK OF A REASONABLE RESPONSE TO THE INABILITY-TO-PAY OF SOME RESIDENTIAL CONSUMERS UNREASONABLY AFFECTS ABILITY-TO-PAY CONSUMERS.

A. Manitoba Hydro's lack of a reasonable response to the inability-to-pay of some consumers has a direct financial impact on all residential consumers. On the one hand, unpaid bills cause the Company to incur credit and collection costs. Unfortunately, the Company does not track credit and collection costs by activity. (GAC/MH-I-10). Nor does Manitoba Hydro track credit and collection costs by customer class. (MKO-Coalition/MH-I-2(d)). The Company does not assign credit and collection costs to particular accounts or sub-accounts. (GAC/MH-I-11). As a result, the Company cannot even compare actual expenditures to budgeted expenditures within a year. (GAC/MH-I-12). All that can be said is that, despite the deterioration in payments as described above, total costs on credit and collection have been reduced from $10.232 million in 2012 to

$6.612 million in 2014. (MKO-Coalition/MH-I-2(d)). That $6.612 million in claimed expenditures imposed on customers lacks a reasonable basis as described above.[20]

In addition, the failure to address inability-to-pay imposes a working capital expense on all customers. According to Manitoba Hydro, the Company's average monthly electric accounts receivable increased by more than 25% from 2012 to 2014, from $104.757 million to $131.413 million. (GAC/MH-I-2(c)). This increase in receivables will generate a resulting increase in working capital, whether or not the Company actually resorts to borrowing. Even in the absence of borrowing, the increase in receivables will reduce available cash to the Company and result in an opportunity cost to Manitoba Hydro.

Credit and collections expenditures, as well as working capital costs, are both costs that will be paid by Manitoba Hydro ratepayers in the absence of a reasonable and prudent response of the Company to inability-to-pay problems.

Q. HOW DOES THE COMPANY'S FAILURE TO REASONABLY ADDRESS INABILITY-TO-PAY HARM THOSE CUSTOMERS EXPERIENCING THAT INABILITY-TO-PAY?

A. In responding to this question, I limit my response exclusively to regulated utility impacts. All of the "social" impacts, in other words, are above and beyond the impacts I identify below.[21]

[20] Manitoba Hydro offered no accounting of how these numbers were derived. Indeed, in response to other Information Requests, the Company stated that it did not track collection expenditures. (GAC/MH-I-10, GAC/MH-I-11, GAC/MH-I-12).

The Company's refusal to even consider a bill affordability program as one reasonable response to inability-to-pay harms the inability-to-pay customers in at least the following ways. First, inability-to-pay customers are like everyone else to the extent that they pay higher rates than should be necessary. Second, the Company's proposed increases in rates will result in an increase in both the number of inability-to-pay customers paying Manitoba Hydro's non-cost-based late payment fee, and the amount of revenue they will pay through the late fee. I discussed the Company's late payment charge in more detail above. As I noted, not only has the average monthly number of residential customers who will be billed the non-cost-based late charge increased (from roughly 77,000 accounts per month to roughly 84,000 accounts), but also the average monthly balance to which the Company attaches its late fee has substantially increased as well.

Finally, the failure to address inability-to-pay has an adverse customer service impact on inability-to-pay customers. For example, while Manitoba Hydro offers its Equal Payment Plan as a "convenient method of payment" for customers in all service classifications (except seasonal customers), it is not available to customers who run a specified arrearage. (GAC/MH-I-14). To the extent that customers do not pay their bills because they cannot afford to pay their bills, therefore, this method of levelizing bills to facilitate payment is unavailable to inability-to-pay customers, precisely those customers

[21] I set these impacts aside for this discussion not because they are unimportant, but simply because they are beyond the scope of this testimony. The social implications of an inability-to-pay Manitoba Hydro bills constitute an important aspect of the regulation of Manitoba Hydro as a public utility. A brief summary of the types of individual benefits resulting from a bill affordability program, and how those household benefits also inure to the benefit of the utility, is set forth in Appendix C.

who might most benefit from the option, not merely as a "convenience," but also as a budgeting response to seasonal inability-to-pay.

(7) Summary.

Q. PLEASE SUMMARIZE YOUR CONCLUSIONS FROM THE DATA AND DISCUSSION ABOVE.

A. The need for reasonable and prudent operations extends to all aspects of the operations of Manitoba Hydro, including Manitoba Hydro's treatment of its residential inability-to-pay customers. Not only should Manitoba Hydro pursue those actions that result in reasonable and prudent operations, but it should pursue those actions that respond to inability-to-pay in an effective and cost-effective fashion. Simply assuming that inability-to-pay doesn't exist (MMF/MH-I-8(a)) (". . .Manitoba Hydro's rates are not only affordable today, but will continue to be affordable in the future"), or assigning responsibility to address inability-to-pay to someone else by labeling it a "social problem," does not fulfill the obligations imposed on Manitoba Hydro as a reasonably managed regulated utility.

Part 2. The Impact of Bill Affordability on Utility Operations.

Q. PLEASE EXPLAIN THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY.

A. In this section of my testimony, I explain the utility-related outcomes that Manitoba Hydro should reasonably expect to achieve if it were to adopt a low-income bill affordability program. The outcomes that I explain below stand in sharp contrast to the

poor performance, driven by the lack of planning, the lack of focus, the lack of performance review, and the lack of accountability that inheres in Manitoba Hydro's existing efforts as I described above. Setting aside the positive social outcomes associated with a low-income affordability program, there are at least the following expected utility-related, business-related outcomes that would be generated by a low-income bill affordability program. While the outcomes I explain below may be best served by particular affordability designs, these outcomes are not exclusively associated with any single program design. Ample opportunity exists to develop a Made-in-Manitoba approach.

A. Cost-Effectiveness Analysis (and how it differs from Cost-Benefit Analysis).

Q. PLEASE DESCRIBE THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY.

A. In this section of my testimony, I explain the difference between a bill affordability program being "cost-effective" and a bill affordability program generating a cost-benefit ratio of greater than 1.0. In program design, the objective is to develop a cost-effective approach to inability-to-pay.

Q. PLEASE EXPLAIN THE DIFFERENCE BETWEEN A COST-BENEFIT ANALYSIS AND A COST-EFFECTIVENESS ANALYSIS.

A. Cost-effectiveness analysis is used to identify the most cost-effective option for achieving a set of defined objectives. Cost-effectiveness analysis is used to ensure the efficient use of resources in instances where benefits are difficult to monetarily value; when the

information required is difficult to determine; or in any other cases where an attempt to make a precise monetary measurement of benefits would be tricky or open to considerable dispute.

While cost-effectiveness is related to cost-benefit analysis in that it is one of the four mechanisms for economic appraisal,[22] it differs from cost-benefit analysis in that cost-benefit analysis is used *only* to address those types of alternatives where the outcomes can be measured in monetary terms.

The purpose of cost-effectiveness analysis is to assess whether an intervention provides value for money. Cost-effectiveness analysis is used to determine which of a set of alternative activities achieves the greatest outcome for the costs expended.[23]

Q. HOW DOES COST-EFFECTIVENESS ANAYSIS RELATE TO UTILITY REGULATION?

There are two flip-sides to cost-effectiveness analysis. On the one hand, cost-effectiveness is used to identify the alternative that, for a given output level, minimizes the cost of achieving the output. On the other hand, cost-effectiveness is used to identify the alternative that, for a given cost, maximizes the level of output. From each perspective, the purpose of cost-effectiveness analysis is to ascertain which intervention

[22] There are four types of economic appraisal: cost-minimization analysis; cost-utility analysis; cost-benefit analysis; and cost-effectiveness analysis.
[23] See e.g., Laurent Dobuzinskis, et al. (ed.). Policy Analysis in Canada: The State of the Art, Institute of Public Administration of Canada, University of Toronto Press: Toronto (2007).

(or program or measure, etc.) can achieve particular objectives at the lowest cost.[24] Both components of the analysis –the extent to which the objectives are achieved, on the one hand, and the cost of achieving on the other hand—are considered. The underlying assumption is that different alternative actions are associated with different costs as well as different results. By choosing those options with the least cost for a given outcome, society can use its resources most effectively.[25]

All of these observations relate to utility regulation.

- One objective of utility regulation is to provide least-cost service, the precise objective which cost-effectiveness is designed to measure.
- One objective of utility regulation is to achieve the efficient delivery of utility service, the precise objective which cost-effectiveness is designed to measure.
- One objective of utility regulation is to operate in the most cost-efficient manner to accomplish the desired objectives, the precise objective which cost-effectiveness is designed to measure.

Spending less money to fall short of generating the desired outcome has never been a utility regulatory objective. Cost-effectiveness is explicitly designed to measure costs taking into account the extent to which desired outcomes are achieved.

[24] Joseph Wholey, et al. (eds.) Handbook of Practical Program Evaluation, 3d ed. (New York: John Wiley & Sons, 2010); Henry Levin and Patrick McEwan (eds.), Cost-Effectiveness Analysis: Methods and Applications, 2d ed. (Thousand Oaks (CA): Sage Publications, 2001).

[25] Cost-effectiveness analysis has always entailed a very practical application. Cost-effectiveness analysis was developed in the 1950s by the United States Department of Defense for assessing the demands of the various branches of the armed services for increasingly costly weapons systems with different levels of performance and overlapping missions. By the 1960s, it had become widely used for analyzing the efficiency of alternative programs outside of the military. Hitch and McKean, Economic Choice in Military Planning, at 217, in Managerial Economics and Operations Research: A Non-Mathematical Introduction, Edward Mansfield, ed. (New York: W.W. Norton, 1966).

Q. DO YOU CONCLUDE THAT THE DOLLARS SAVED ON A LOW-INCOME BILL AFFORDABILITY PROGRAM WILL EXCEED THE DOLLARS EXPENDED ON A BILL AFFORDABILITY PROGRAM?

A. No. That analysis is a cost-benefit analysis, an analysis that is inappropriate to an evaluation of low-income bill affordability assistance. To apply a cost-benefit analysis to a bill affordability program is to make an inappropriate choice of the four alternative economic appraisal mechanisms for program evaluation.

- First, a cost-benefit analysis does not specify the public policy decision that has been made that utility service should be preserved where feasible.
- Second, a cost-benefit analysis would need to identify the entire range of benefits over time, a task that would be difficult, if not impossible, to do. For example, the reduced financing costs arising from the increased stability in revenue would be difficult.
- Third, a cost-benefit analysis in this instance would assume that all financial and economic benefits can be identified, dollarized and measured. That assumption would be wrong. For example, it is difficult, if not impossible, to dollarize (and then to measure) the benefit to the utility of increased sales to customers whose service has not been disconnected for nonpayment. It is also difficult, if not impossible, to dollarize (and measure) the benefit to the utility of re-directing collection efforts away from customers who can ***not*** afford to pay so that those collection activities are instead directed toward customers who ***can*** afford to pay.[26]

[26]The alternative means of determining benefits for a cost-benefit analysis in these circumstances is through a willingness-to-pay analysis. Utility customers, when asked, have expressed a willingness-to-pay for low-income

- Fourth, preparing a cost-benefit analysis would require the utility to identify the incremental costs of the affordability program. The cost of a bill affordability program is, of course, *not* simply the dollar difference between bills at the standard residential rate and bills at the affordable rate. To assert that would be to imply that, in the absence of the affordability program, 100% of the billed revenue would have been collected, an assertion that is manifestly in error. The utility would instead, need to determine, over time, what incremental amount of billed revenue would *not* be collected because of the grant of an affordability discount. As I will discuss further below, that dollar amount is not at all clearly a positive number.

These are merely illustrations of why it is inappropriate to apply a cost-benefit test to a bill affordability initiative. No utility collection effort is held against a cost-benefit standard.

Q. IS THERE ANY OTHER UTILITY ACTIVITY THAT IS SIMILARLY NOT HELD AGAINST A COST-BENEFIT STANDARD?

A. Yes. Another example of a practice that Manitoba Hydro would not subject to a cost-benefit analysis would be worker safety. Reasonable utility management, in other words, would not accept worker injury or death based on the economic analysis that preventing the injury or death would cost more than the benefits returned by protecting the worker. As with low-income bill affordability, the proper test is cost-effectiveness. The analysis

affordable bill programs of roughly $1 per month. Willingness-to-pay surveys are summarized in the January/February 2015 issue of FSC's Law and Economics Insights ("The Public, When Asked, Indicates a Willingness to Pay for Rate Affordability Assistance for the Poor"). Available at the following URL: www.fsconline.com/04_news/news. This result is also consistent with what the Ontario Energy Board found in its 2014 public survey of willingness-to-pay.

assesses how to minimize the cost per unit of output (worker safety) and/or how to maximize the output per dollar of input.

Q. **HAS COST-EFFECTIVENESS ANALYSIS BEEN ACCEPTED AS AN APPROPRIATE EVALUATION TECHNIQUE IN MAKING CANADIAN REGULATORY DECISIONS?**

A. Yes. Cost-effectiveness analysis is not only an "accepted" technique, it is the *preferred* technique in the circumstances presented by low-income inability-to-pay. As the Treasury Board of Canada stated in its "Canadian Cost-Benefit Analysis Guide: Regulatory Proposals" in 2007:

> When benefits cannot be expressed in monetary values in a meaningful way, *a cost-effectiveness analysis ("CEA") should be carried out* to assist in making effective decisions. A CEA calculates cost-effectiveness ratios so that the most efficient option is chosen. In a sense, a CEA ensures technical efficiency in the process of achieving a desired outcome.

(emphasis added). With these observations in mind, I turn to a discussion of the cost-effectiveness of a bill affordability program in helping a utility to collect billed revenue.[27]

[27] "Cost effectiveness analysis evaluates the costs of different means of achieving a pre-determined goal." Driesen (2005). Is Cost-Benefit Analysis Neutral, Syracuse University College of Law. A significant body of literature exists distinguishing a "cost-effectiveness" analysis from a cost-benefit analysis. See generally, Diana Fuguitt and Shanton Wilcox. Cost-Benefit Analysis for Public Sector Decision Makers, Quorum Books: Westport (CT) (1999). See also, note 24, supra.

B. Increased Bill Payment Coverage.

Q. PLEASE DESCRIBE THE FIRST EXPECTED BUSINESS-RELATED IMPACT ARISING FROM A LOW-INCOME AFFORDABILITY PROGRAM.

A. The first impact of a bill affordability program would be an increase in the bill payment coverage ratio by participating low-income consumers. The bill payment coverage ratio is the percentage of billed revenue actually paid by the customer. A customer who pays $90 of a $100 bill, for example, has a bill payment coverage ratio of 90%. Having a bill payment coverage ratio of more than 100% means the customer is not only paying his/her current bill, but is also retiring pre-existing arrears. Having a bill payment coverage ratio of less than 100% means that the customer is incurring additional arrears.

In contrast to the baseline performance currently existing in Manitoba as I described above, public utilities adopting bill affordability programs see a dramatic improvement in the bill payment coverage ratios of their low-income customers. For example, consider the Apprise, Inc. evaluation of the New Jersey Universal Service Fund. That Apprise report shows the following for gas or electric customers (target affordable bill burden of 3%):

Distribution of Effective Coverage Rate by Net Energy Burden (gas or electric: 3%)				
	Bill Payment Coverage Rate			
Burden	< 50%	50% - <90%	90% - <100%	100% or more
<2%	0.0%	2.7%	5.3%	92.0%
2% - 3%	0.0%	6.0%	11.5%	82.5%
3% - 4%	0.0%	10.0%	13.2%	76.9%
4% - 6%	0.0%	11.6%	16.6%	71.6%
6% - 8%	0.4%	16.6%	17.4%	65.6%
More than 8%	1.0%	25.6%	16.1%	57.4%

As can be seen in the Table above, so long as the bill burden remained in the target range in New Jersey, from 94% (82.5% + 11.5%) to 97% (92% + 5.3%) of the low-income

customers generated a bill payment coverage ratio over 90%. Indeed, between 82.5% and 92% of low-income program participants had a bill payment coverage ratio of 100% or more.

Similar results have arisen from the Pennsylvania bill affordability programs (called "CAPs" as I described above). Each year, the Pennsylvania PUC's Bureau of Consumer Services ("BCS") collects and reports data on the performance of that state's "universal service" programs. The data collection allows policy-makers and utility service providers to compare the performance of low-income residential customers participating in the CAP programs of Pennsylvania utilities to "confirmed low-income" customers in general. In 2013 (the most recent year for which data is available), Pennsylvania utilities had 1.046 million confirmed low-income customer accounts statewide.[28] The confirmed low-income accounts were heavily payment-troubled. Fifteen percent had been disconnected for nonpayment, of which only 72% were reconnected. More than 22% of all confirmed low-income accounts were in debt, with an average monthly arrears of $656. Of those confirmed low-income accounts in arrears, fewer than half were on payment agreements.

In contrast to these payment difficulties for confirmed low-income customers, the participants in the low-income CAP programs had an average payment coverage ratio of 86%. Through their bill affordability programs, in other words, Pennsylvania's utilities

[28] Pennsylvania utilities "confirm" low-income status in a variety of ways, including but not limited to, the customer's receipt of federal fuel assistance and information provided through customer service processes such as negotiating payment plans. Pennsylvania utilities had an estimated 1,987,364 number of low-income customer accounts. Accordingly, the utilities had "confirmed" roughly 53% of their estimated number of low-income accounts. Given that these numbers include both gas and electric utilities, however, it cannot be concluded that these numbers reflect "households." Some accounts may be counted twice, once by the electric utility and again by the natural gas utility.

took extremely payment-troubled confirmed low-income customers and structured a response where the utilities were receiving nearly $9 of every $10 billed.

Public Service Company of Colorado ("PSCO") also experienced a dramatic increase in the payment coverage of its low-income program participants. The impact of the Colorado low-income program can be seen in the graph of payment coverage ratios (i.e., customer payments / billed revenue = payment coverage ratio) presented immediately below. PSCO's bill affordability program participants substantially out-performed those PSCO low-income customers who received LIHEAP –called "LEAP" in Colorado--[29] but who did not participate in the bill affordability program.

As can be seen in Figure 1 below, by the end of the program pilot, the payment coverage ratio of participants in PSCO's low-income bill affordability program (83%) was nearly 30% higher than the payment coverage ratio of low-income customers *not* participating in the program (55%). Moreover, the cumulative payment coverage ratio of program participants was increasing throughout the term of the pilot. PSCO has since expanded its program to a full-blown low-income bill affordability program.

[29] Both "LIHEAP" (Low-Income Home Energy Assistance Program) and "LEAP" (Low-income Energy Assistance Program) refer to the federal energy assistance program in the United States.

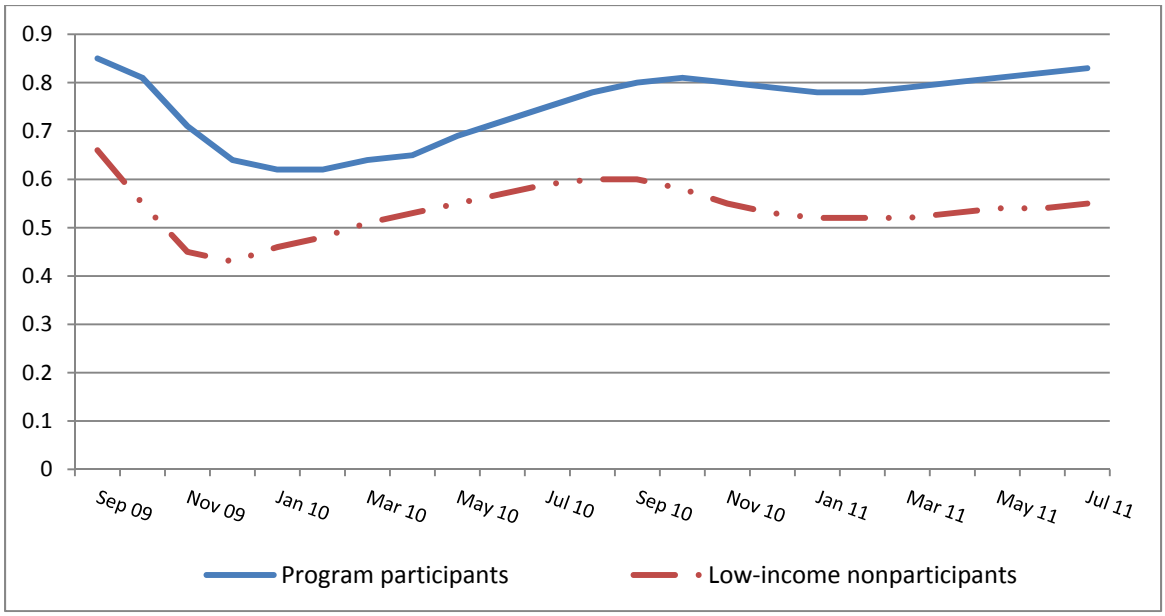

Figure 1: Cumulative Customer Payment Coverage Ratio for
PSCO Low-Income Affordability Program Participants Compared to Low-Income Non-Participants

Other utilities operating other program designs generated similar results. One impact of the bill affordability programs operated in Indiana was to significantly increase the rate at which low-income customers paid their bills. Customers that participated in the Vectren program, for example, paid 82% of their Vectren bill, compared to a payment of 50% for Vectren low-income non-participants. The results of the Citizens Gas and Coke Utility ("CGCU") bill affordability program, while not as substantial, nonetheless demonstrated the same outcome. While CGCU participants paid 79% of their current utility bill, non-participants paid only 64%.

A universal finding of programs offering affordable bills has been that low-income customers increase their payment coverage ratios. In contrast to the ongoing and substantial nonpayment problems faced by Manitoba Hydro, bill affordability participants tend to pay their bills.

B. Increased "Net Back."

Q. PLEASE DESCRIBE THE SECOND EXPECTED BUSINESS-RELATED IMPACT ARISING FROM A LOW-INCOME AFFORDABILITY PROGRAM.

A. A corollary to the increased bill payment coverage ratio of bill affordability program participants is an increase in the "net back" experienced by the utilities offering affordable low-income bills. Stated conceptually, it is better for a utility to collect 90% of a $70 bill ($70 x 0.90 = $63) than it is for that utility to collect 60% of a $100 bill ($100 x 0.60 = $60). Under an affordable bill plan, in other words, even though a portion of the bill is discounted, the extent to which payments increase is such that *total cash collections* go up. This increase in revenue is accompanied by a decrease in the cost of collecting that revenue.

Q. PLEASE EXPLAIN WHAT YOU MEAN WHEN YOU REFER TO "NET BACK."

A. "Net back" is a common metric in measuring the cost-effectiveness of collecting revenue. The "net back" criterion focuses on whether a utility offering affordable bills experiences an increase in net revenues if customer bills are paid in a more complete fashion as a result of the affordable bill. As a type of cost-effectiveness measure, "net back" provides not only a measurement of the effectiveness of the low-income programs (through the "payment coverage ratio" measure), it also provides for a measurement of the cost of the program as well. By combining the two measurements into one criterion, "net back" provides for a balancing of both factors (effectiveness of the programs on the one hand and costs of the programs on the other hand).

Q. PLEASE EXPLAIN THE BASIS FOR CONCLUDING THAT AN AFFORDABLE BILL PROGRAM WILL RESULT IN A HIGHER NET BACK.

A. The results of bill affordability programs can be compared to the large, and growing, collections problem for Manitoba Hydro. The increase in revenue resulting from a bill affordability program has been found for both the Colorado and Indiana low-income programs. In assessing the impact of improved customer payment performance on total revenue, the Colorado evaluation reported that "the PEAP program generated a revenue neutrality when PEAP participants were compared to other low-income customers, but not when compared to the residential population as a whole." It continued on to state that:

> The lesson learned from [the PSCO data] is that PEAP generates a sufficiently substantial improvement in payment coverage ratios relative to the low-income (nonparticipant) population to more than offset the discount provided. To the extent that the low-income [non-participants had] a prior history of non-payment, the revenue neutrality will be somewhat (but not substantially) greater.[30]

By the end of the pilot project period, PSCO's affordability participants paid more revenue than they would have had they paid at the non-participant bill payment coverage ratio, despite the fact that program participants were receiving a substantial discount on their bills. Over the entire participant population, PSCO pocketed nearly a half-million dollars more in revenue despite providing the program discounts. The PSCO results showed, also, that the benefit of added revenue to the company grew over time.

[30] Colton (2012). Public Service Company of Colorado's (PSCo) Pilot Energy Assistance Program (PEAP) and Electric Assistance Program (EAP): 2011 Final Evaluation Report, prepared for Public Service Company of Colorado: Denver (CO).

The same results were found for Indiana's low-income programs. A 2007 evaluation of the CGCU low-income program (called, the Universal Service Program, or "USP") found:[31]

> Customers that participated in the Citizens Gas USP made substantively greater payments than did that company's nonparticipant population. Over the months of January through March 2007, USP participants paid 79% of their current utility bill. While billed $273,627 during those winter months, the USP participants paid $215,897. In contrast, the Citizen Gas nonparticipants paid only 64% of their January through March billings. While billed $304,072, these customers paid $194,577. As can be seen, the USP was better than revenue neutral to Citizens Gas. While USP participants were billed 90% of what nonparticipants were billed, they paid 111% what nonparticipants paid.[32]

As can be seen, the Indiana results were the same as found in Colorado: the increased payment performance generated more cash collections even despite the billing discount.

Q. PLEASE EXPLAIN THE BASIS FOR CONCLUDING THAT, AS TOTAL CSH COLLECTIONS INCREASE, THE COSTS INCURRED TO COLLECT THAT REVENUE WILL DECREASE.

A. The benefits of the increase in revenue identified above are further enhanced when the decreased expenses are also taken into account. The cost of collection decreases because of improvements in the relative efficiency and effectiveness of collection activities for the participant customer populations relative to the non-participant population. The reduction in expenses can be derived by comparing the incremental costs to generate the customer payments received from the comparison non-participant population had those

[31] All dollar figures presented in this analysis, unless other explicitly noted to the contrary, are associated with the sample population and not the total population.
[32] Colton (2007). An Outcome Evaluation of Indiana's Low-Income Rate Affordability Programs, prepared for Citizens Gas and Coke Utility, Vectren Energy, and Northern Indiana Public Service Company.

payments been generated at the same efficiency as the payments were from the participant population.

The expected impact resulting from a reduced collection expense was confirmed in the PSCO program evaluation. Stated quite simply, PSCO had to work less hard to collect revenue from program participants than it did to collect revenue from non-participants. Looking at the cost of PSCO's most common collection activity (issuing notices of disconnection for nonpayment), the company's cost of collection from program participants was more than 65% less than the company's cost of collection from program non-participants.

Overall, in other words, a utility such as Manitoba Hydro can be expected not only to collect more money through an affordable bill, but to spend less money in the process of collection in so doing.[33]

C. Increased Efficiency / Productivity of Collection Efforts.

Q. PLEASE DESCRIBE THE THIRD EXPECTED BUSINESS-RELATED IMPACT ARISING FROM A LOW-INCOME AFFORDABILITY PROGRAM.

[33] This is classic cost-effectiveness analysis. Cost-effectiveness is assessed based on what is termed the "cost-effectiveness plane." This cost-effectiveness plane consists of a two-dimensional assessment as follows:

4. Less effective and more expensive	1. More effective and more expensive
3. Less effective and less expensive	2. More effective and less expensive

A. A utility bill affordability program can be expected to increase the productivity of utility collection efforts directed toward low-income customers. Improvements in the productivity of collection activities can occur in either of two ways:

- Reduce the effort. The need for collection interventions can be reduced thus allowing an increased payment per each collection intervention performed;[34] or

- Increase the result. The customer response to the collection activity can improve thus allowing an increased payment per each collection intervention performed.[35]

In essence, an affordable bill can be expected to improve the productivity of collection activities from two different but related perspectives. On the one hand, an affordable bill will affect how much revenue (outputs) is generated by each collection intervention. On the other hand, an affordable bill will affect how many collection activities are needed to (inputs) generate the revenue.

Productivity is the ratio of the effort expended to the outcomes generated. The metrics used to measure collection efficiency are thus two-fold:

- The number of each collection activity per 1,000 customer payments (measured in number of payments without regard to the size of each individual payment); and

- The number of each collection activity per $1,000 in customer payments (measured in dollars of payments made).

In both instances, a lower number is "better" than a higher number in that a lower number indicates less effort needed per outcome generated.[36]

[34] In this first instance, improvement can be seen even if total dollars collected remains the same (but the number of interventions needed to generate those dollars decreases).
[35] In this second instance, improvement can be seen if the total number of collections activities remains the same but the dollars generated by those activities increase.

The evaluation of PSCO's affordable bill program found that the collection activities that PSCO directed toward program participants were more productive at generating payments than the collection activities directed toward program non-participants. PSCO needed to engage in from three to five times more collection activities for each 1,000 customer payments it received from non-participants.[37] As shown in Figure 2 below, the Colorado evaluation found that low-income customers who were *not* program participants, on a cumulative basis over the 24-month study period, received more disconnect notices per 1,000 customer payments than did affordability program participants.

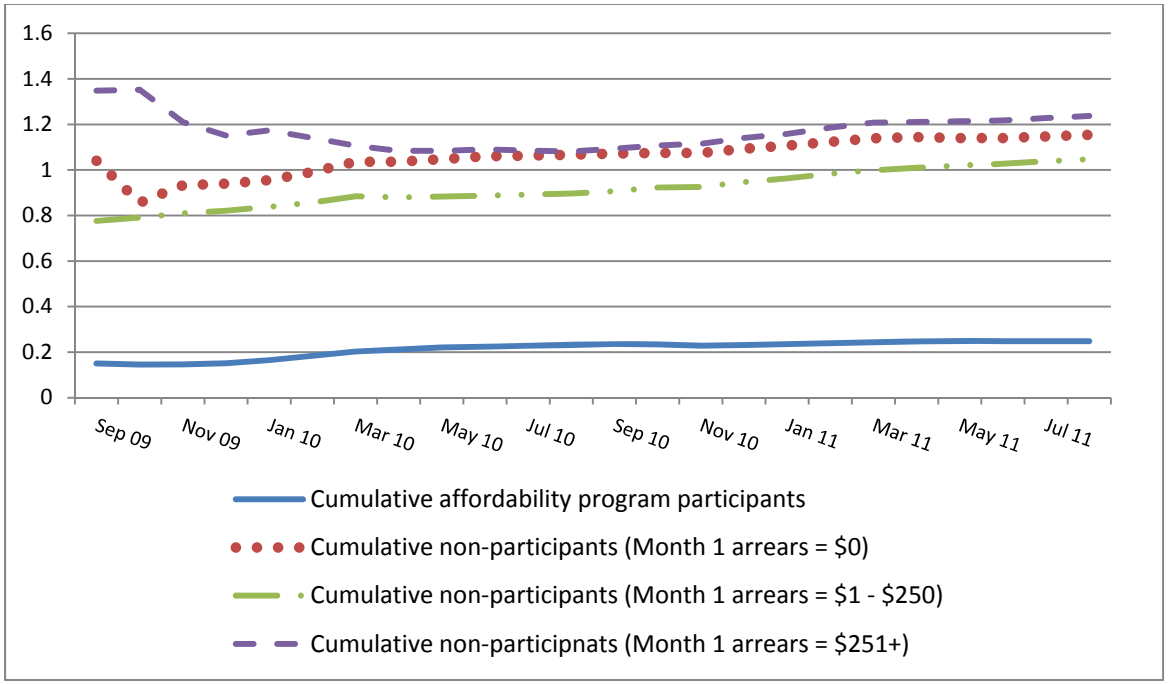

Figure 2: Cumulative Disconnect Notices per 1,000 Customer Payments for Affordability Participants Compared with Non-Participants by Level of Month 1 Non-Participant Arrears.

[36] Engaging in four collection actions per each $1,000 in payments is "better" than engaging in seven collection activities per each $1,000 in payments.
[37] As discussed in more detail above, this result might occur for one of two reasons. On the one hand, more PEAP participants might make payments without need of any disconnect notices being issued. On the other hand, more PEAP participants might respond to the receipt of a disconnect notice by making payments.

The results were the same when collections productivity was viewed in terms of dollars of payments rather than in terms of numbers of payments. In Colorado, participation in the affordable program reduced the reliance on disconnect notices as a collection activity. As shown in Figure 3 below, while program participants required between one (1) and two (2) disconnect notices for each $1,000 in customer payments, non-participants required between five (5) and seven (7).

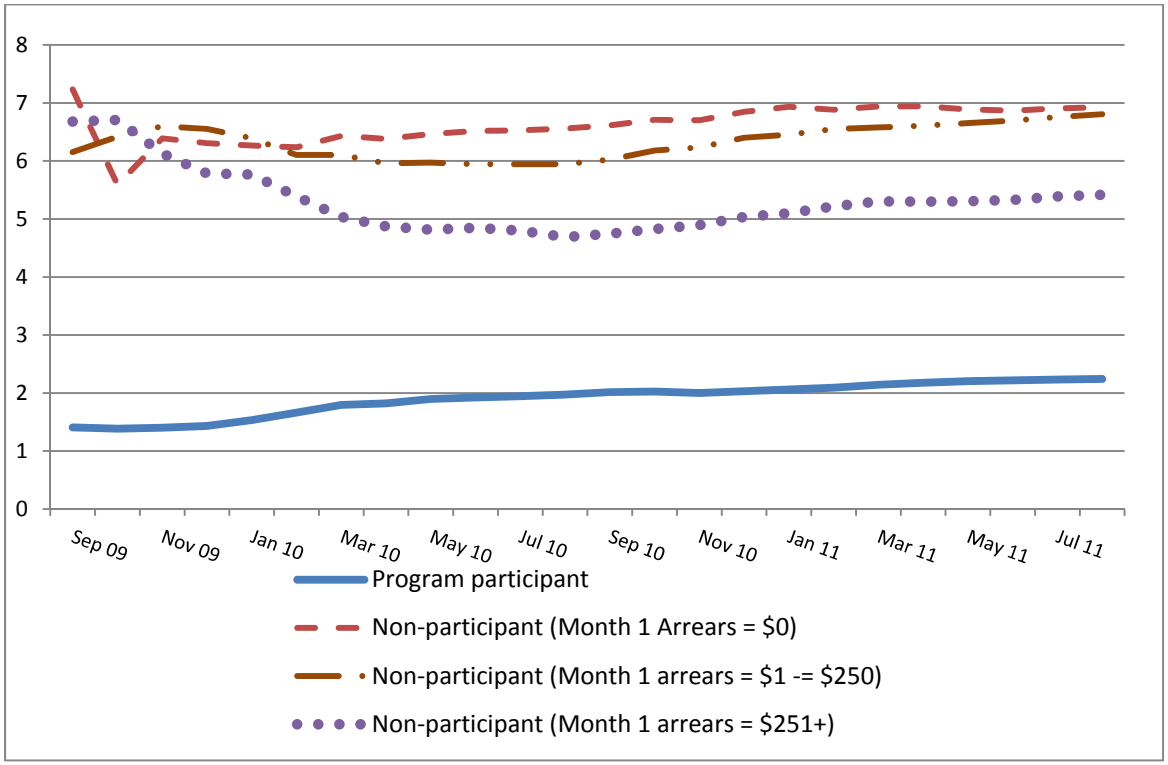

Figure 3: Cumulative Disconnect Notices for Nonpayment per $1,000 in Customer Payments for Affordability Participants Compared to Non-participants by Level of Non-participant Month 1 Arrears.

In sum, based on both measures of productivity, overall, not only did PSCO collect more revenue from its affordability program participants (as discussed above), but the utility was required to engage in fewer collection activities to generate those payments.

Q. DOES AN AFFORDABILITY PROGRAM AFFECT THE EXTENT TO WHICH LOW-INCOME CUSTOMERS MAKE PAYMENTS WITHOUT NEED OF *ANY* COLLECTION ACTIVITY DIRECTED TOWARD THEM?

A. Yes. Ultimately, the ideal circumstance for a utility is to receive payment without the need to resort to *any* collection activity in aid of that receipt. Affordable bills have been shown to improve payment performance in this respect.

When a utility issues a bill to a customer, that company seeks not simply full and timely payment of the bill, but seeks also the payment of the bill without need for collection activity to prompt the payment. Offering an affordable bill program helps generate unprompted payments. Consider PSCO's affordable bill program. The PSCO affordable bill program allowed the utility to reduce both the rate and intensity of the use of disconnection nonpayment notices ("DNP notice") as a collection activity. The Table below presents information on both the incidence of DNP notices per account and the rate at which customers receive DNP notices

PSCO's program participants received one-third the number of DNP notices (0.14/participant) that program non-participants received (0.42/participant). While the difference was narrower between program participants and non-participants having $0 in Month 1 arrears,[38] there still existed a significant drop in the number of DNP notices per account (0.14/participant compared to 0.36/non-participant with $0 in Month 1 arrears). In contrast, non-participants having a positive level of arrears in Month 1 of the study

[38] Simply because an account had $0 in arrears in Month 1 did not mean that it would continue to have $0 in arrears throughout the program. One reason the evaluation disaggregated the population by the Month 1 arrears was to determine whether that history of payment or nonpayment would have an effect on program outcomes over time.

period had a rate of receiving DNP notices higher than those accounts with $0 of Month 1 arrears (roughly 0.50).

Incidence of Disconnect Notices by Program Participants and Non-Participants

	Participants	Non-Participants by Month 1 Arrears		
		$0	$1 - $250	$251+
Average no. of DNP notices per account /a/	0.14	0.36	0.51	0.52
Average no. of DNP notices per account receiving a DNP notice	5.7	6.9	9.4	9.4

NOTES:

/a/ DNP = disconnect non-payment.

Aside from the absolute incidence of DNP notices, the program participant population experienced a much less intense use of DNP notices even for those accounts having received DNP notices. The Table above also presents the number of DNP notices issued over the 24-month study period for each account having received a DNP notice. Program participants received far fewer notices as compared to non-participants. While program participants received fewer than six (6) DNP notices (per each billed account having received a DNP notice) over the 24-month period, non-participants with a positive Month 1 arrears received more than nine (9), while non-participants with a $0 Month 1 arrears received roughly seven (7).

As can be seen, even at the same time that an affordable bill improves the efficiency of collection activities, the affordable bill ***also*** decreases the need to use collection activity ***at all*** to generate payments from low-income customers.

D. Long-Term Success of Collection Efforts.

Q. PLEASE DESCRIBE THE FOURTH EXPECTED BUSINESS-RELATED IMPACT ARISING FROM A LOW-INCOME AFFORDABILITY PROGRAM.

A. By addressing the underlying inability-to-pay utility bills, a low-income bill affordability program can be expected to increase not only the productivity of collection efforts (as I describe immediately above), but it can also be expected to increase the long-term success of collection efforts as well. It would be unreasonable to expect a low-income affordable bill program to *totally* eliminate the need for *all* collections efforts directed toward program participants. Even non-low-income residential customers have some collection effort directed toward them. However, an affordable bill can be expected to help increase the success of those collection efforts that *are* required.

Q. HOW DOES ONE MEASURE "LONG-TERM SUCCESS" IN THIS REGARD?

A. A "successful" (or "effective") collection activity is measured not merely by the extent to which customers make payments in the month in which the collection activity occurs, but also over a period of time immediately subsequent to that collection activity. A collection activity that generates a payment in the month of the activity, only to see the customer fall back into a pattern of nonpayment in the immediate subsequent months, in other words, is less "effective" (or "successful") than a collection activity that generates a series of more timely (or more complete) payments over a period of months.

The PSCO program evaluation measured the success of collection efforts for low-income customers participating in that company's affordable bill program as compared to the

success of collection efforts directed toward low-income customers *not* participating in the bill affordability program. The data examined the percentage of accounts receiving disconnect notices that have a customer payment coverage ratio of more than 1.0 in the ensuing four months. In this inquiry, a higher number is "more effective" while a lower number is "less effective." A higher number indicates that more accounts having received a disconnect notice made payments equal to a higher proportion of their bill for current usage in the four months immediately following receipt of a disconnect notice.

The data presented in Figure 4 below examines the proportion of customers having received a DNP notice who made payments equal to or more than 100% of their current bill. The percentage of program participants with a payment coverage ratio of more than 1.0 is consistently higher than the proportion of non-participants doing so. A payment coverage ratio of greater than 1.0 means that the customer is paying more than his/her bill for current usage. That customer, in other words, is completely paying his/her bill for current usage and making some payment toward the arrears that was the reason for issuing the disconnect notice in the first instance.

As can be seen, the payment performance for participants in the low-income program improved over time, while the payment performance of low-income customers *not* participating in the low-income program did not. In this Figure, the population is limited to customers who received a disconnect notice for nonpayment. The payment coverage ratio examined the ratio of dollars of payments made in the four months after receiving a disconnect notice to the dollars of bills received in the four months after receiving a

disconnect notice. Figure 4 shows that three times more program participants were paying their entire bill for current service plus something toward their arrears than were program non-participants.

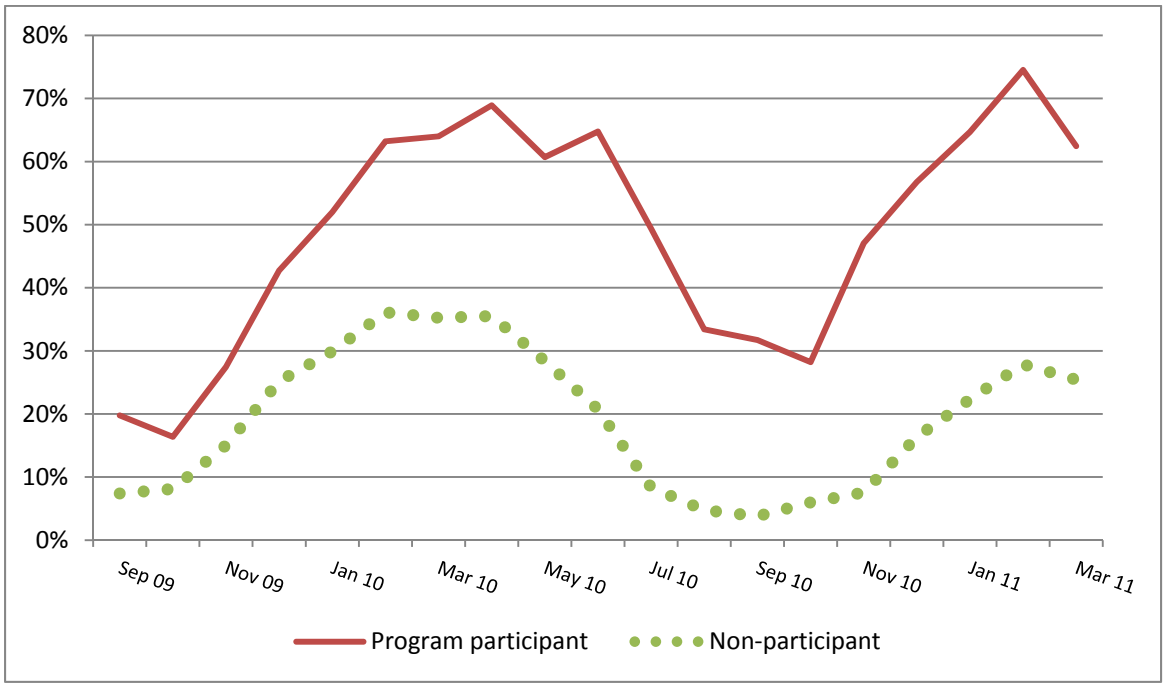

Figure 4: Percent of Customers Receiving DNP Notices with Customer Payment Coverage Ratio > 1.0 in 4-Months After DNP Notice

The same impact (i.e., the relative success of collection efforts with and without an affordability program) can be examined by considering the *lack* of effectiveness (or success) of collection efforts. Figure 5 below, again taken from the PSCO evaluation, examines the proportion of affordability program participants and non-participants who made *some* payment in the four months after receiving a notice of disconnection for nonpayment, but whose dollars of payments were less than 50% of the dollars of bills they received during that same four month period. A customer payment coverage ratio of less than 0.50 means, in other words, that the customer payments in the four month period after receipt of a DNP notice were less than one-half of the bills for current usage in those four months. A customer with a payment coverage ratio of less than 0.5 is also

paying *nothing* toward retiring their arrears, since they are paying less than half of their current bill.

As I described above, a collection activity that generates a payment in the month of the activity, only to see the customer fall back into a pattern of nonpayment in the immediate subsequent months, is deemed to be "less effective" than a collection activity that generates a series of more complete payments over a period of months. In Figure 5 below, a lower number is "more successful" and a higher number is "less successful." A higher figure means that a greater proportion of customers receiving a disconnect notice for nonpayment made payments equal to less than half of their bill for current usage in the ensuing four months. As can be seen, the affordability program participants substantially out-performed the non-participants. While roughly 20% of low-income program non-participants were paying less than half of their bill for current service after receiving a disconnect notice for nonpayment, only roughly five percent (5%) of program participants were.

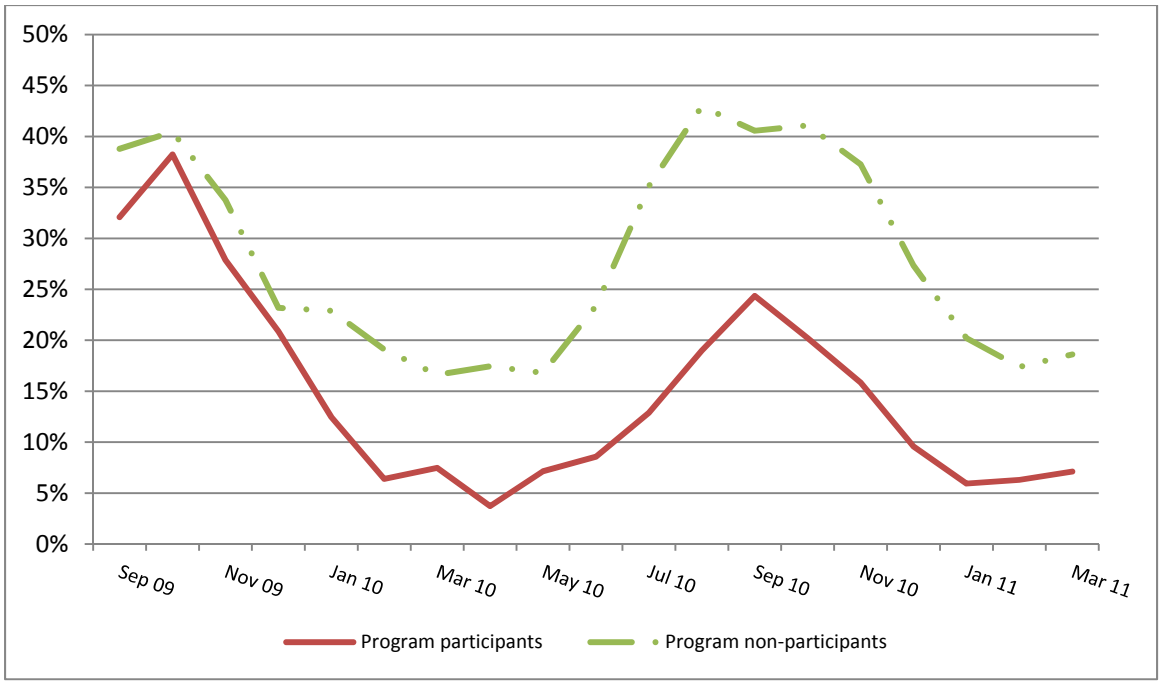

Figure 5: Customer Payment Coverage Ratio > 0 <0.50 for Customers Receiving DNP Notice In 4-Months after Receiving DNP Notice

Either Figure 4 or Figure 5 immediately above alone, but certainly both of the two Figures in combination one with the other, document that a bill affordability program can be expected to improve the success of a utility's collections performance. Substantially more program participants were paying their entire bill and retiring their arrears after receiving a disconnect notice for nonpayment. Substantially fewer program participants were paying less than half of their bill after being subjected to a collection activity.

F. Payments Yielding $0 Balances.

Q. PLEASE DESCRIBE THE FIFTH EXPECTED BUSINESS-RELATED IMPACT ARISING FROM A LOW-INCOME AFFORDABILITY PROGRAM.

A. The outcome that a utility seeks from its customers is a payment that results in a $0 balance. That outcome has been examined from a variety of perspectives elsewhere

throughout this testimony (e.g., the payment coverage ratio). In my discussion below, however, I examine the impact of an affordable bill program on the *regularity* with which complete bill payment occurs. The regularity of complete bill payment is examined below from two perspectives:

- On the one hand, the discussion considers the extent to which complete bill payments are made as a proportion of the number of bills rendered.
- On the other hand, the discussion considers the extent to which complete bill payments are made as a proportion of the number of payments that are made.

While a utility would prefer to have customers make bill payments that result in a $0 balance in response to each bill (i.e., a ratio of 1.0), a customer that exhibits a higher proportion of payments resulting in $0 balances of the payments that are made nonetheless is still less risky than a customer that makes a lower proportion of payments that result in a $0 balance.

Q. HOW DOES A BILL AFFORDABILITY PROGRAM AFFECT THE INCIDENCE OF COMPLETE BILL PAYMENTS?

A. An affordable bill can be expected to improve the incidence at which participating low-income customers make complete bill payments (i.e., a payment yielding a $0 balance). In Colorado, PSCO's program participants out-performed non-participants in the proportion of bills that are met with payments that result in a $0 balance. Figure 6 below presents the data. Most significantly as can be seen from this data, the extent to which program participants out-perform program non-participants is notable. While 50% or more of warm-weather bills resulted in a $0 balance for the participant population, fewer

than 20% of the warm-weather bills resulted in a complete retirement of outstanding balances for the non-participant population. Even with an influx of "crisis" assistance in the spring of 2011, the proportion of non-participants making complete bill payments falls well short of program participants.

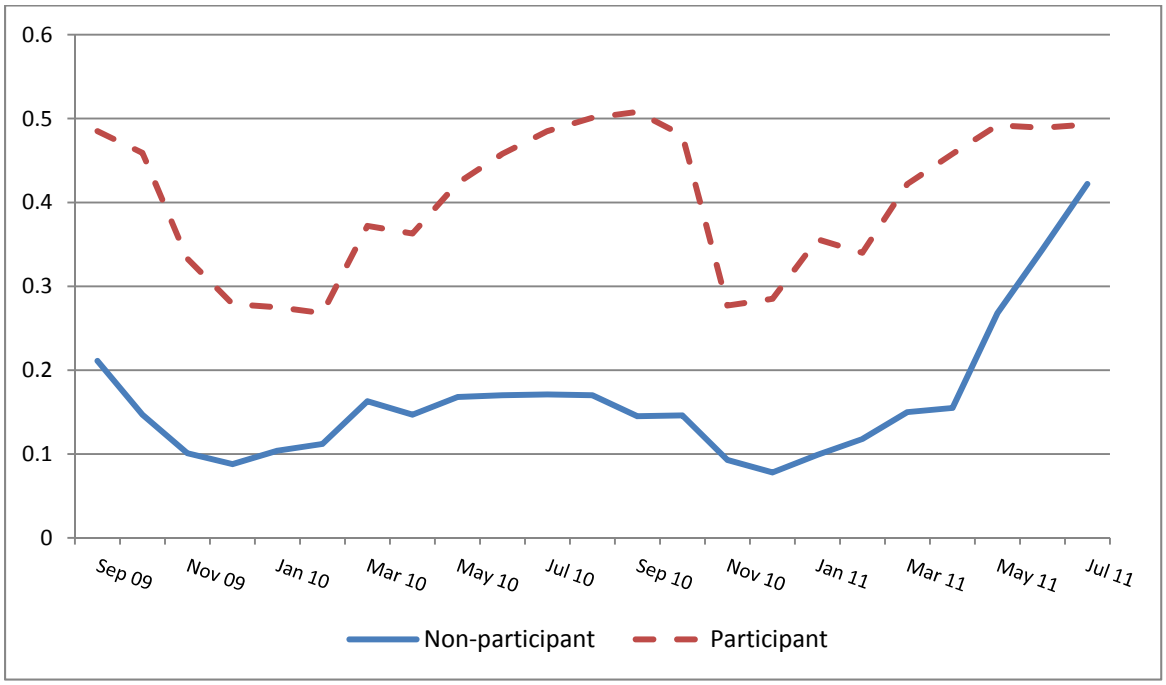

Figure 6: Ratio of Number of Payments Resulting in $0 Balance to Number of Bills by Program Participation

Figure 7 below shows that when program participants *did* make payments, they tended to make payments sufficient to retire their entire balances. While program participants tended to make payments retiring their entire balance in response to 50% of the bills that are rendered, they also tended to make payments retiring their entire outstanding balance in between 60% and 70% of all the payments that they make. In contrast, while the program non-participants tended to make payments retiring all outstanding balances in response to between 10% and 20% of bills they receive, they also tended to make

payments retiring their entire outstanding balance in only 20% to 30% of the payments that they made.

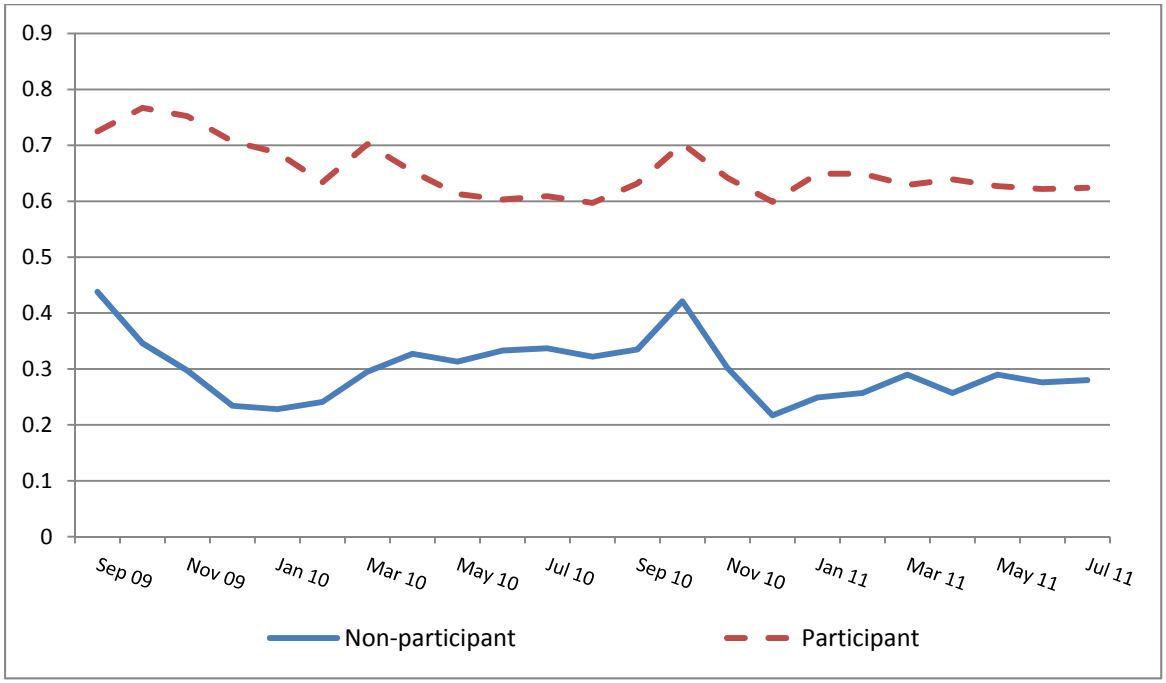

Figure 7: Ratio of Number of Payments Resulting in $0 Balance to Number of Payments By Program Participation.

G. Improved Price Signals.

Q. PLEASE DESCRIBE THE SIXTH EXPECTED BUSINESS-RELATED IMPACT ARISING FROM A LOW-INCOME AFFORDABILITY PROGRAM.

A. One clear impact of a low-income bill affordability program is the extent to which such a program will improve the "price signals" delivered to inability-to-pay customers through utility bills.

Q. HOW DOES A UTILITY IMPROVE PRICE SIGNALS BY REDUCING BILLS TO AN AFFORDABLE LEVEL?

A. As a general rule, energy bills represent an ineffective means to send price signals to low-income customers. As I describe in detail above, low-income customers, particularly customers with energy burdens exceeding a prescribed level, pay less than their entire bill. As a result, low-income customers' inability-to-pay for utility service substantially distorts the price signal the consumer receives.

The viability of sending a price signal assumes that the customer has the ability to *receive and to act upon* the signal.[39] If a customer has an ability to pay $50 per month, in other words, the price signal sent to a customer by receiving a bill of $85 rather than $75 is negligible, if any signal exists at all. In contrast, the price signal received through a bill for $49 rather than a bill for $55 is more significant. The closer that Manitoba Hydro can tailor bills to reflect affordability, the more efficacious any price signal will be. A low-income discount program that reduces bills to an affordable level actually *improves* the price signaling of utility rates.

Q. PLEASE DESCRIBE WHY INABILITY-TO-PAY ATTRIBUTABLE TO UNAFFORDABLE BILLS IMPEDES PRICE SIGNALS.

A. Without an affordable bill, any price signal is impeded in two ways.

- First, the price signal provided through the price of current consumption is only effective if a customer has the ability to receive and respond to that price signal.

[39] From an economic theory perspective, it is easy to understand this result. From a price theory perspective, price signals "work" only if there is adequate information about price and quality. The inability-to-pay, and the resulting arrears, impedes this information process. By improving this information process, while maintaining the task of reflecting increases and decreases in a bill, the bill affordability program improves rather than distorts the price signal. See generally, Colton (1990). "Customer Consumption Patterns within an Income-Based Energy Assistance Program." 24 Journal of Economic Issues 1079.

When a customer can afford to pay only a fraction of the bill, the impact of the per-unit price becomes less meaningful.

- Second, the impact that the price of current consumption has on the total bill is diluted to the extent that there are substantial arrears wrapped into the *total* bill. Prices only send a "price signal" if the *current* bill and the *total* bill are reasonably the same.

Given these two fundamental truths set forth in any basic price theory, the extent to which an affordable bill program improves price signals can be examined. Let me focus on data from electric utilities offering bill affordability programs in Pennsylvania.

Q. PLEASE EXPLAIN THE EXTENT TO WHICH PENNSYLVANIA'S AFFORDABLE BILL PROGRAM BETTER ALIGNS ACTUAL BILLS WITH AFFORDABLE BILLS THAT SEND EFFECTIVE PRICE SIGNALS.

A. I will address the seven electric utilities[40] offering affordable bills in Pennsylvania immediately below. The Table below shows the average bill for current consumption under standard residential rates; the affordable bill; and the "CAP credit" (i.e., the difference between the affordable bill and the bill at standard residential rates).

[40] Duquesne Light, Metropolitan Edison, PECO Energy, Pennsylvania Electric Company (Penelec), Penn Power Company, Pennsylvania Power and Light (PPL), and West Penn Power Company.

Program Year: 2013	Bill at Standard Rate	Bill under Affordability Program	Difference Between Actual Bill and Bill at which Price Signal Received
Duquesne Light	$1,267	$924	$343
Met Ed	$1,452	$684	$768
PECO Energy	$1,393	$828	$565
Pennelec	$1,205	$552	$653
Penn Power	$1,123	$468	$655
PPL Utilities	$1,982	$948	$1,034
West Penn Power	$1,356	$1,020	$336

As can be seen, a change in the bill at standard residential rates would have no impact on sending a "price signal" to these inability-to-pay customers. The annual bills at standard residential rates are hundreds of dollars away from being at a level where a change would send any reasonable price information to the program participants. The bills at standard rates range between 30% and 140% greater than the bill level which delivers effective information. In contrast, with 90% (or more) of the bill under CAP actually being paid, any change in price (or consumption) that may affect the bill under the affordability program will have an impact on whether the bill is paid, or whether the bill remains unpaid. As a result, the effectiveness of price signals is enhanced.

Q. PLEASE EXPLAIN THE IMPACT THAT ARREARS WILL HAVE ON IMPEDING PRICE SIGNALS TO INABILITY-TO-PAY CUSTOMERS.

A. Carrying substantial arrears impedes the price signal delivered by the price for current service. The Colorado program illustrates this impact. PSCo's low-income population brought an average of nearly $350 of pre-existing arrears[41] to the low-income bill affordability program. The bulk of those arrears came from participants with large (e.g.,

[41] This average is the average arrears spread over all low-income customers, not the average spread over only the low-income customers having arrears.

greater than $1,000) pre-existing arrears. A full 60% of the pre-existing arrears were associated with accounts owing more than $1,000, with more than half of that brought by accounts owing more than $2,500. Even at the lowest level of arrears, however, (>$0 to $300), the average arrears that would have been attached to total bills was $132. Changes in prices for current service, therefore, would have sent no "price signal" given this expansion of the total bill charged to consumers. A one percent increase in price for current service, in other words, would not result in a one percent increase in the total bill for service. The transmittal of information by each one percent increase in price would instead be impeded to the extent that the account carried arrears.

Pre-existing Arrears at the Time of Enrollment by Size of Arrears (PSCO Program Participants)

Level of Pre-existing Arrears	Percentage of Accounts	Percentage of Dollars	Average Arrears
$0 or less	36%	0%	$0
> $0 - $300	39%	15%	$132
> $300 - $500	9%	10%	$388
> $500 - $1,000	8%	16%	$695
> $1,000 - $2,500	6%	28%	$1,578
> $2,500	3%	32%	$4,250
Total	100%	100%	$347

Q. WHAT DO YOU CONCLUDE?

A. Arguments about the adverse impact of affordable bills on the "price signals" sent by utility bills are not well-founded.[42] Not only are such arguments not grounded in fact, but

[42] Appendix B sets out a list of third party evaluations of low-income affordability programs. Not one single evaluation in over a 25 year period has found that a low-income program resulted in a systematic increase in customer usage.

they are not well-grounded in sound economic price theory either. Rather than impeding price signals, entirely consistent with basic price theory, affordable bill programs have been found to improve the price signals embedded in utility rates.

H. Poverty in Manitoba.

Q. PLEASE EXPLAIN THE RELEVANCE OF THE INCIDENCE AND DEPTH OF POVERTY IN MANITOBA RELATES TO YOUR MANITOBA HYDRO ANALYSIS.

A. Unquestionably, the extent of poverty in Manitoba is substantial. We know that depending on the poverty measure used (e.g., after-tax LICO vs. after-tax LIM), between 105,000 and 164,000 Manitobans are living in poverty.[43] As the Canadian Centre for Policy Alternatives ("CCPA") notes further:

> Poverty rates tell us how many people are living in poverty at a particular time, but it is also important to consider the depth of poverty. This indicator looks at how far below the poverty line people in low income are living. In 2011, people living in poverty had an income that was, on average, 33 percent below the poverty line. Depending on the poverty measures used, the depth of poverty in Manitoba has stayed between 25 and 35 percent below the poverty line throughout the last two decades. This tells us that Manitobans have not been living just below the poverty line, they have been living far below it.

The findings of CCPA have been confirmed in the government-directed poverty reduction and social inclusion initiative.[44] As I describe in more detail below with

[43] Canadian Centre for Policy Alternatives (January 2015). The View from Here 2015: Manitobans Call for a Renewed Poverty Reduction Plan, at 12 – 13, CCPA: Winnipeg (MAN).

[44] See generally, All Aboard: Manitoba's Poverty Reduction and Social Inclusion Strategy (May 2012); All Aboard: Manitoba's Poverty Reduction and Social Inclusion Strategy 2012/13 Annual Report (Sept. 20130; All Aboard: Manitoba's Poverty Reduction and Social Inclusion Strategy 2013/14 Annual Report (Sept. 2014); Reducing Poverty and Promoting Social Inclusion: Budget Paper E (2014); Reducing Poverty and Promoting Social Inclusion:

respect to the public costs of unaffordable home energy, CCPA found numerous public costs associated with poverty in general. CCPA reports:

> We all pay for persistent poverty and homelessness. Study after study links poverty with poorer health, more young people in trouble with the law, higher rates of incarceration and higher justice system costs, more demands on numerous social and community services, more stress on family members, greater involvement in the child welfare system, and diminished chances of success at school. We know that poverty among children in particular has tremendous costs over the long run because it affects children's cognitive development and future life chances. Children who live in poor families are at a higher risk of becoming involved in crime, dropping out of school, and relying on more income supports and social services over their lifetime. Homelessness is particularly costly, both to society at large and to the public treasury.
>
> The Province of Manitoba spends approximately $500 million per year on its justice budget, this is up from close to $300 million in 2006. The City of Winnipeg spends approximately $257 million per year on policing, up from $114 million in 2000. Approximately 38 percent of the Provincial budget is allocated to health care. We must take a different and preventative approach to addressing these ever-increasing costs — one that tackles the root causes of crime, poor health, and involvement in the child welfare system.

(View from Here 2015, at 20). To the extent that affordable home energy contributes to these outcomes, addressing the inability-to-pay problem, as I describe below, will help generate financial savings to the provincial government in its governmental capacity.

Q. DOES THIS INFORMATION ON POVERTY LEAD TO THE CONCLUSION THAT A BILL AFFORDABILITY PROGRAM IS A RATEPAYER-FUNDED PROGRAM TO ALLEVIATE POVERTY?

Budget Paper E (2013); Reducing Poverty and Promoting Social Inclusion: Budget Paper E (2012). The "All Aboard: Reducing Poverty and Promoting Social Inclusion" initiative is under the direction of co-chairs Minister Kerri Irvin-Ross (Minister of Family Services) and Minister Peter Bjornson (Minister of Housing and Community Development).

A. Not at all. Indeed, this information lends support to my conclusion that Manitoba Hydro must find a more effective, as well as a more cost-effective, way to address inability-to-pay problems. The information above helps to explain ***why*** Manitoba Hydro's insistence that inability-to-pay is simply a social problem to be addressed by the government doesn't work from the perspective of its own best business interests. It explains why simply sending more disconnect notices is not an appropriate collection mechanism for inability-to-pay customers. It helps to explain why responding to inability-to-pay by increasing a customer's bill (through a late fee) is neither an effective nor a cost-effective collection technique. It helps to explain why simply offering deferred payment arrangements, with huge downpayments and just as big monthly payment requirements, is an ineffective collection technique. In short, it helps to explain why from a business perspective, in an effort to find the most cost-effective way to collect bills tendered to inability-to-pay customers, Manitoba Hydro should adopt some form of bill affordability assistance.

In short, the information above helps to explain not only why Manitoba Hydro's current approach ***does not*** work, it helps to explain why Manitoba Hydro's current approach, which excludes bill affordability assistance on ideological grounds, ***cannot*** work. It helps to explain why a bill affordability program will help improve both the effectiveness, and the cost-effectiveness, of Manitoba Hydro's business processes.

I. Summary

Q. PLEASE SUMMARIZE YOUR CONCLUSIONS BASED ON THE ABOVE DATA AND ANALYSIS.

A. Based on the data and analysis I present above, I reach the following conclusions:

1. An appropriately designed and well implemented bill affordability program, as an integrated part of Manitoba Hydro's rate structure, is in the public interest.

2. A bill affordability program can be designed to be a more cost-effective approach for dealing with issues of customer inability-to-pay than are traditional collection methods.

3. The positive social outcomes associated with low-income affordability programs represent benefits above and beyond the utility-related benefits produced by such programs.

4. A low-income bill affordability program can reasonably be expected to generate at least the following utility-related business benefits to Manitoba Hydro:

    a. A bill affordability program will result in an increase in the bill payment coverage ratio by participating low-income consumers.

    b. A bill affordability program will result in an increase in the "net back" experienced by the utility offering affordable low-income bills.

    c. A utility bill affordability program can be expected to increase the productivity of utility collection efforts directed toward low-income customers.

    d. A utility bill affordability program helps generate payments without resort to collection activity used to prompt those payments.

    e. Even at the same time that an affordable bill program improves the productivity of collection activities, the affordable bill program also decreases the need to use collection activity at all to generate payments from low-income customers.

    f. A utility bill affordability program can be expected to increase not only the productivity of collection efforts, but it can also be expected to increase the long-term success of collection efforts.

g. An affordable bill can be expected to improve the incidence at which participating low-income customers make complete bill payments (i.e., a payment yielding a $0 balance).

h. One clear impact of a low-income bill affordability program is the extent to which such programs improve the "price signals" delivered to inability-to-pay customers through utility bills.

Q. ARE THE RESULTS YOU DISCUSS ABOVE UNIQUE TO A LIMITED NUMBER OF JURISDICTIONS?

A. No. Low-income affordable bill programs have now been in effect in various jurisdictions for more than 25 years. They have been frequently and comprehensively evaluated for multiple utilities, in multiple jurisdictions, by multiple third party evaluators. A list of third party program evaluations that I have reviewed and have in my possession (with some exceptions noted for older reports) is presented in Appendix B.

Part 3. The Benefits of Bill Affordability to the Province in its Governmental Capacity.

Q. PLEASE DESCRIBE THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY.

A. Setting aside the positive business outcomes that a low-income affordable bill program will generate for Manitoba Hydro in its capacity as a public utility, the province, in its governmental capacity, will also recognize specific beneficial outcomes to its own governmental finances as a result of an affordable bill program. Given that Manitoba Hydro is a Crown corporation, owned by, and to be operated on behalf of, the provincial government, these governmental benefits are of particular significance.

Q. IN DISCUSSING THE BENEFITS OF A BILL AFFORDABILITY PROGRAM TO THE PROVINCE IN ITS GOVERNMENTAL CAPACITY, DO YOU INTEND TO SAY THAT BENEFITS DO NOT ACCRUE TO INDIVIDUAL PARTICIPANTS?

A. As I describe above, a bill affordability program will have direct financial benefits to Manitoba Hydro in its capacity as a utility. In addition, a bill affordability program will have direct financial benefits to the owner of Manitoba Hydro. Since Manitoba Hydro is a Crown corporation, that owner is the provincial government sitting in its governmental capacity. Finally, in addition to these two sets of benefits, a bill affordability program will have direct benefits to program participants. Even these benefits, however, as I explain in Appendix C to my testimony, have beneficial business implications for Manitoba Hydro through their impacts on household income and ability-to-pay. These benefits to individual households, however, are not the exclusive benefits of a bill affordability program; neither are the individual program participants the exclusive beneficiaries.

The bottom line to this discussion is this: a bill affordability program such as I describe below is *not* offered as a utility-funded program to alleviate poverty. The bill affordability program instead is offered as a more cost-effective utility response to inability-to-pay than Manitoba Hydro is currently pursuing. That fact should not be obscured by the realization that additional benefits will inure both to the province in its governmental capacity and to the individual program participants.

As I describe above, in adopting bill affordability programs for its natural gas and electric utilities, the Pennsylvania PUC noted that "BCS (i.e., the PUC's Bureau of Consumer Services) believes that incorporating the following recommendations into utility operations will lead to a more rational and cost effective use of existing resources." As the PUC noted, a bill affordability program is "designed to be a more cost-effective approach for dealing with issues of customer inability-to-pay than are traditional collection methods."

A. The Impacts on Education Costs and Outcomes.

Q. PLEASE DESCRIBE THE FIRST BENEFIT THAT WILL ARISE TO THE PROVINCE AS THE GOVERNMENTAL OWNER OF MANITOBA HYDRO.

A. The first impact I will describe involves improvements to educational outcomes of provincial students and the reduction of the cost of providing education. One impact of unaffordable home utility service is the forced mobility of households. "Forced mobility" occurs when households are required to change residences, either inside or outside a utility's service territory, in response to unaffordable service. This mobility may occur because the current residence is rendered uninhabitable due to the lack of utility service; because the household has insufficient funds to reasonably expect that an arrearage balance to its particular utility will ever be retired and thus moves; or because the household simply seeks shelter with more affordable utility costs.

Q. HOW DOES THIS FREQUENT MOBILITY AFFECT THE EDUCATION SYSTEM?

A. Adverse education outcomes result from frequent mobility.[45] Third-graders who have changed schools frequently are two-and-a-half times as likely to repeat a grade as third-graders who have never changed schools. Of the nation's third-graders who have changed schools frequently, 41 percent are below grade level in reading, compared with 26 percent of third-graders who have never changed schools. 33 percent of children who have changed schools frequently are below grade level in math, compared with 17 percent of those who have never changed schools.

When children change schools four or more times, they are more likely to drop out of school. Children who changed schools four or more times by the Eighth Grade were at least four times more likely to drop out than those who remained in the same school.

Q. HOW DO THESE IMPACTS AFFECT THE PROCESS AND COST OF PROVIDING EDUCATION?

A. The adverse impacts arising from the frequent mobility associated with unaffordable home utility bills arise not simply for the children affected, but also for the school districts who are charged with educating these children. Highly mobile students pose problems to the school systems. High numbers of mobile children interfere with teachers' ability to organize and deliver instruction. Teachers find it difficult to assess the needs of such new children, determine their past education experiences, and provide instruction that builds on these experiences. These tasks may be especially difficult when many new children enter the classroom throughout the year, often with no advance notice.

[45] Colton, Roger (1996). A Road Oft Taken: Unaffordable Home Energy Bills, Forced Mobility and Childhood Education in Missouri, 2 Journal on Children and Poverty 23.

Teachers in schools with high proportions of children who change schools after the beginning of the year report that these school changes disrupt classroom instruction, and teachers must spend additional time on non-instructional tasks. Teachers may therefore not have the time to identify gaps in such a child's knowledge; moreover, these gaps may grow as the child is left on his or her own to make sense of the new curriculum and its relationship to the one at the previous school.

Q. CAN THESE PROBLEMS ARISING FROM THE FREQUENT MOBILITYASSOCIATED WITH UNAFFORDABLE UTILITY BILLS AFFECT LOCAL EDUCATION REVENUES?

A. Yes. While not related to school costs, the frequent mobility of school-age students, particularly if between school systems, may also adversely affect school revenues. To the extent that individual schools receive public aid to education based on the number of "student days" of attendance, actual dollars of government support will decrease as schools lose "student days" either to non-attendance at all, or to attendance in a different school district.

B. The Impacts on Homelessness and Housing Abandonment.

Q. PLEASE DESCRIBE THE SECOND BENEFIT THAT WILL ARISE TO THE PROVINCE AS THE GOVERNMENTAL OWNER OF MANITOBA HYDRO.

A. Unaffordable utility bills contribute to the prevalence of homelessness and, as a result, to the municipal costs associated with responding to that homelessness. A bill affordability program will help the province control those costs of responding to homelessness.

Q. PLEASE EXPLAIN THE BASIS FOR YOUR CONCLUSION THAT HOMELESSNESS AND UNAFFORDABLE UTILITY BILLS ARE RELATED.

A. According to a study by Temple University's Institute for Public Policy Studies, over five years, an average of 32 percent of the homes of residential electric customers in Philadelphia became abandoned within one year following service termination for nonpayment. The average percentage was found to be slightly lower for gas terminations: 22.4 percent. The IPPS study concluded: "The evidence linking utility terminations to abandonment is strong, consistent over a five year period and across two utilities, gas and electric. The evidence also suggests that the percentage of units which have experienced termination and become vacant increases over time."[46]

These results have been confirmed elsewhere. The most commonly cited reasons for homelessness in Colorado, for example, were loss of job and housing costs, followed by family/relationship breakup and utility costs. Slightly more than half (53%) of the reported reasons were related to the cost of housing (housing costs, utility costs and eviction / foreclosure).[47] In the United States, nationwide, over the past five years, 14% of Energy Assistance recipients moved in with friends or family due to the inability to pay energy bills; 6% were evicted from their home or apartment due to unpaid energy

[46] Institute for Public Policy Studies, Temple University (June 1991). An Examination of the Relationship between Utility Terminations, Housing Abandonment, and Homelessness.
[47] Colorado Statewide Homeless Count, Summer 2006.

bills; 4% faced home mortgage foreclose due to home energy bills.[48] Similar results would be expected for customers of Manitoba Hydro.

C. The Impacts on Public Safety.

Q. PLEASE DESCRIBE THE THIRD BENEFIT THAT WILL ARISE TO THE PROVINCE AS THE GOVERNMENTAL OWNER OF MANITOBA HYDRO.

A. The unaffordability of home energy directly contributes to the municipal costs of providing public safety. The impacts arise because of the adverse public safety consequences of the loss of home energy service. For example, consider the following: the move to auxiliary heating sources when primary heating fuels are disconnected opens up the possibility of an associated fire risk for low-income households. While home heating equipment is no longer the ***single*** most substantial cause of home fires, it remains ***one*** of the leading factors contributing to fires, as well as to fire-related injuries and deaths. In particular, portable and fixed space heaters present a risk of harm.[49]

While portable space heaters are not the major cause of home heating fires, they play a much more substantial role in deaths and injuries. Portable and fixed space heaters (and their related equipment such as fireplaces, chimneys and chimney collectors) accounted for roughly two of every three (65%) home heating fires in 1998 and three of every four (76%) associated deaths.

[48] National Energy Assistance Directors Association (November 2011). 2011 National Energy Assistance Survey: Final Report, APPRISE, Inc.: Princeton (NJ).
[49] Roger Colton. (2001). In Harm's Way: Home Heating, Fire Hazards, and Low-Income Households, prepared for National Fuel Funds Network.

Q. ARE INCREASED PUBLIC SAFETY COSTS ASSOCIATED WITH LOW-INCOME INABILITY-TO-PAY STATUS IN PARTICULAR?

A. Yes. According to the National Fire Protection Association ("NFPA"), "not being able to afford utilities" is one of the "major factors of increased fire risks" for low-income households. That risk, which not only increases the safety risks to low-income households, but increases the costs of providing public safety to the city, involves not merely the increased incidence of home fires generally, it is associated also with the increased risk of fires being deadly. Several factors contribute to this result. As my research for the National Fuel Funds Network found:

- Not being able to afford smoke detectors. "Three fifths of all home fire deaths occur in the approximately seven percent of homes without detectors." One-third of all homes with detectors that have fires have detectors that are not working.

- Not always being able to afford child care and leaving children unattended or unsupervised. Unattended children are those left completely alone with no adult or babysitter to look after them.

- Not being able to afford a telephone. "Without a telephone, the chance of a delay in alarm when reporting a fire to the fire department increases." In the U.S., telephone penetration rates for households relying exclusively on public assistance for income fall far below the population as a whole.

- Living in less fire resistant housing, as well as using less fire resistant furniture and mattresses. "Diminished financial resources prevent many families from investing in fire safety because the resources they do have usually go to other, more immediate necessities."

D. The Impacts on Business Locational Decisions.

Q. PLEASE DESCRIBE THE FOURTH BENEFIT THAT WILL ARISE TO THE PROVINCE AS THE GOVERNMENTAL OWNER OF MANITOBA HYDRO.

A. Offering affordable bills to low-income customers can be expected to have long-term positive impacts for the province from the perspective of maintaining and expanding its revenue base. Ensuring that individuals and households do not face the deprivation of basic household necessities is a strong and growing factor in businesses making locational decisions. Research for Ontario's Ministry of Enterprise, Opportunity and Innovation, in collaboration with the Institute for Competitiveness and Prosperity, reported that sound economic development policy includes ensuring that "the right social investments are made to ensure social harmony."[50] The connection between assuring access to basic household necessities and maintaining the competitiveness of the local economy has been recognized throughout Canada.[51] These locational factors are particularly important for high technology firms, which represent a particularly strong future growth potential for the economy.[52]

Q. HOW, IF AT ALL, DOES AN AFFORDABLE BILL PROGRAM AFFECT THE PRODUCTIVITY OF LOCAL WORKERS?

[50] Merick Gertler, et al. (2002). Competing on Creativity: Placing Ontario's Cities in North American Context, report produced for the Ontario Ministry of Enterprise, Opportunity and Innovation and the Institute for Competitiveness and Prosperity. In this sense, affordable home energy can be viewed in the same way that health and education are viewed. "There are numerous empirical studies that demonstrate the links between education, health and competitiveness. In particular, both health and education are correlated with superior economic outcomes such as higher productivity, higher per capita incomes, and faster growth." Meyer Burstein (2004). Developing the Business Case for Multiculturalism, Outreach and Promotion Directorate, Multiculturalism and Human Rights Branch, Department of Canadian Heritage: Ottawa (ONT).

[51] Improving the Competitiveness and Standard of Living of Canadians: Common Position of Provincial and Territorial Finance Ministers (December 1999); see also, Human Resources and Skills Development Canada, Social and Economic Impact of Labor Standards (March 2008).

[52] See, notes 56 - 57, infra, and accompanying text.

A. Assistance programs such as a utility bill affordability program improve the productivity of local workers. Unreliable transportation, inadequate child care, and poor health are leading contributors to absenteeism, tardiness, and turnover among low-income workers.[53] One joint study, performed in collaboration with the Center for Workforce Preparation of the U.S. Chamber of Commerce and the Center for Workforce Success of the National Association of Manufacturers, reports that many low wage workers fail to access public benefits. This failure, according to the joint Chamber of Commerce / Association of Manufacturers study, "not only hurts the workers who miss out on income and benefits; it also hurts their employers through higher turnover and increased absenteeism."

An unpublished survey in Detroit Michigan, conducted by ASE (and cited by the CoC/NAM study) highlights workplace problems that employers can experience when employees' non-work needs are not addressed. ASE asked entry-level workers and their supervisors in five companies about barriers to employee advancement. After "caring for a dependent," "money problems" were reported more frequently than 19 other potential problems ranging from "understanding work assignments" to "getting along with colleagues." "Financial worry about making ends meet" appears to contribute to absenteeism, distraction on the job, strained relations with supervisors and co-workers, and a number of other factors that reduce productivity.[54]

[53] Geri Scott (2004). Private Employers and Public Benefits, Workforce Innovation Networks (WINS): Boston (MA) and Washington D.C. WINS is a collaboration of Jobs for the Future, the Center for Workforce Preparation of the U.S. Chamber of Commerce, and the Center for Workforce Success, The Manufacturing Institute of the National Association of Manufacturers.
[54] "Private Employers and Public Benefits," at 5.

Other research confirms these findings. One professor at Johns Hopkins University considered the extent to which increased low-income status results in increased overall costs to business. She found a variety of costs to business, reporting:

> Poverty. . .produces ill-prepared workers whose lives are easily disrupted by small catastrophes. If the car breaks down, if the kid gets sick, it suddenly becomes impossible to be a reliable worker. Poverty also generates poor health among workers, making them less reliable still and raising the cost of employing them.[55]

Q. PLEASE EXPLAIN HOW THESE IMPACTS ARE RELATED TO BUSINESS LOCATIONAL DECISIONS.

A. Economic developers are increasingly recognizing the importance of quality of life in business location decisions. "It should be noted that businesses focus on quality of life considerations when making location decisions because they are relevant for attracting a high quality workforce."[56] Quality of life has been deemed particularly influential for companies involved in research and development and high technology, and in enterprises employing highly skilled workers in information or knowledge-based services and production. Evidence of this observation can be found in a study conducted by Love and Crompton in which they surveyed 174 decision makers of businesses that had initiated, expanded or relocated to Colorado in the previous five years. They reported that quality of life was considered the second most important factor for prompting the business move

[55] Erica Schoenberg (1999). The Living Wage in Baltimore: Impacts and Reflections, John Hopkins University Department of Geography and Environmental Engineering: Baltimore (MD).
[56] Taylor, et al. (2006). A Cost-Benefit Analysis of Universally-Accessible Pre-Kindergarten Education in Texas, Bush School of Government and Public Service, Texas A&M University: College Station (TX).

and not selecting a specific community, as well as the third most important factor in the final selection of a specific community.[57]

E. Summary

Q. PLEASE SUMMARIZE YOUR FINDINGS AND CONCLUSIONS.

A. Based on the data and analysis I presented above, I conclude that a bill affordability program for Manitoba Hydro will deliver considerable benefits to the province in its capacity as a provider of governmental services.

In this regard, an affordable bill program is analogous to the provision of other public goods. Affordable utility bills, for example, can be analogized to investments in affordable child care in this respect, in that they have been found to yield direct benefits to business. As the Committee for Economic Development has reported, "business and the economy as a whole gain a more productive work force when employees feel confident that their children are secure and learning."[58] This is not merely a statement of policy, it is a conclusion based on considerable empirical research: "Those companies that have taken steps to address the child care needs of their work force report that they have improved their ability to attract and retain high-quality personnel, thereby enhancing their current work force and their competitiveness."[59]

[57] Love and Crompton (1999). "The Role of Quality of Life in Business (RE) Location Decisions. Journal of Business Research, 1999:44:211-222.
[58] Research and Policy Committee (1993). Why Child Care Matters: Preparing Young Children for a More Productive America, A Statement by the Research and Policy Committee of the Committee for Economic Development, at 1, Committee for Economic Development: New York.
[59] Why Child Care Matters, at 3.

The Committee for Economic Development has reached similar findings respect to financial investment in universal education, stating that:

> a firm and enduring commitment to excellence in education on the part of America's business community is not merely a matter of philanthropy; it is enlightened self-interest. As employers, taxpayers, and responsible community members, business can regard an investment in education as one that will yield a handsome return.[60]

Precisely the same conclusions can be reached about Manitoba Hydro's investment in affordable home energy bills. It "is not merely a matter of philanthropy, it is enlightened self-interest." In sum, affordable utility service generates public benefits that without question are above and beyond the direct benefits to Manitoba Hydro in its capacity as a utility. These public benefits are also benefits that are above and beyond the benefits to individual participant households.

Part 4. Reasonable Bill Affordability Responses.

Q. PLEASE DESCRIBE THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY.

A. In this part of my testimony, I describe the available and reasonable utility responses that can serve as alternatives to the ineffective and inefficient responses that Manitoba Hydro currently pursues in response to inability-to-pay. While I do not recommend the adoption of any single affordability response in this proceeding, I do recommend that the PUB endorse the implementation of an affordability program. I further recommend that the

[60] Research and Policy Committee (1985). Investing in our Children: Business and the Public Schools, A Statement by the Research and Policy Committee of the Committee for Economic Development, at 5, Committee for Economic Development: New York.

question of what might constitute the most appropriate bill affordability structure for Manitoba Hydro be assigned to a collaborative process.

A. Broad Structure of a Collaborative Process.

Q. PLEASE DESCRIBE THE BROAD STRUCTURE OF THE COLLABORATIVE PROCESS THAT YOU RECOMMEND.

A. I recommend that the Public Utility Board ("PUB") assign the task of developing the specific structure of a bill affordability program to a collaborative process. The collaborative process should be under the direction of a PUB staffperson. The process should be charged with developing *how* to deliver affordability assistance. The policy question of *whether* to deliver affordability assistance should be decided by the PUB sitting as the regulatory oversight body. The collaborative process should involve the following steps:

- The collaborative process should begin with each party[61] submitting specific hypotheses of potential measures to be explored.

- As part of the collaborative discussions, the collaborative process should identify the gaps in information and data that would impede reaching a resolution of the assessment of hypotheses. Responsibility for presenting the data to fill those gaps, including the responsibility to develop that data where it currently does not exist, is assigned to particular parties to the collaborative process.

- After a period of time in which relevant information is collected and discussed, each party should submit a "term sheet" outlining the affordability structure they would recommend.

- Each contested issue, as identified by a comparison of the term-sheets, should be subject one at a time to group discussion under the direction of PUB staff.

[61] As with litigation, the collaborative process should be open to all stakeholders joining as named parties. Once begun, however, again as with litigation, the process would be limited to those named parties.

Discussions should be time-limited to prompt the collaborative process to move toward a decision, either agreeing or disagreeing.

- At the end of a prescribed time-certain –I would recommend a twelve month period starting from the date of the final order in this proceeding—the Final Collaborative Report as described below would be prepared and presented.

- At the end of a prescribed time period within which the collaborative process would proceed, the next step should involve the PUB staffperson(s) who is facilitating the collaborative submitting a Final Collaborative Report to the PUB documenting the areas of agreement and identifying the areas of disagreement. Parties would be bound to support the identified areas of agreement before the PUB.

- The final step would then be the presentation, by the parties to the collaboration, of data and argument to the PUB in support of their respective positions as limited by the areas of disagreement identified in the Final Collaborative Report. The PUB would sit as the final decision-maker on those areas of disagreement.[62]

Q. CAN YOU PROVIDE AN EXAMPLE OF A SIMILAR COLLABORATIVE PROCESS IN WHICH YOU RECENTLY HAVE PARTICIPATED?

A. Yes. Appendix D sets forth key documents from a similar collaborative process involving PECO Energy Company, two key low-income advocacy groups, and the state Office of Consumer Advocate ("OCA") (for whom I worked).[63] OCA is the state-funded agency that represents the interests of all residential ratepayers in utility regulatory proceedings.

The first document is the "Secretarial Letter" from the Pennsylvania PUC to the named parties in litigation involving the structure of PECO Energy's low-income affordability program. Those parties were directed to seek to "resolve[…] some or all of their

[62] The PUB could, also, reject the results of the collaborative process in toto should it find those results to be patently unreasonable.
[63] Because of their duplicative nature, not all signature sheets have been included with the respective documents in the Appendix.

differences regarding PECO's CAP design. . ." The Secretarial Letter recommended that the parties "consider enlisting the services of the Commission's mediation process in the interim. . .in an attempt to resolve their differences. . ." The parties were charged with indicating by a date-certain "the elements of any partial or complete consensus." The Secretarial Letter finally indicated that "failure to reach a full resolution by [a date certain] will result in this matter being assigned to the OALJ [Office of Administrative Law Judge] for an on-the-record proceeding. . ."

The second document is the Joint Petition for Settlement filed as a result of the collaborative process in which the PUC directed the parties to engage. The Joint Petition states in relevant part that:

> the Joint Petitioners engaged the services of the Commission's mediation office, and conducted extensive mediation services. At least eight half- or full-day sessions [occurred] over the next several months, with extensive exchange of data and other information between the Joint Petitioners. As a result of that extensive mediation effort and related settlement discussions, the Joint Petitioners reached an agreement on a new CAP design and related issues, as set forth in the Term Sheet. As stated previously, each of the Joint Petitioners will file a Statement in Support of this Joint Petition.

The resulting agreed-upon structure of the "new CAP design" is presented in the Term Sheet appended to the Joint Petition.

Q. PLEASE SUMMARIZE THE PURPOSE FOR WHICH YOU SUBMIT THE PECO ENERGY CAP COLLABORATIVE PROCESS DOCUMENTS.

A. I submit the PECO Energy CAP Collaborative Process documents in support of two propositions. First, these documents support the proposition that a collaborative process

such as that which I recommend above is a reasonable means of reaching resolution on the type of low-income bill affordability program which a utility should implement. Second, these documents support the broader proposition that a utility bill affordability program is a reasonable response by a regulated public utility to the inability-to-pay circumstances facing low-income customers.

As I recommend for Manitoba Hydro, with PECO Energy, the question of *whether* to adopt a bill affordability program was determined by the regulatory body at the front-end. The collaborative process was directed to consider *how* to implement an affordable bill program design.

B. The New Ontario Electricity Support Program (OESP).

Q. PLEASE DESCRIBE THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY.

A. In this Section of my testimony, I describe the Ontario Electricity Support Program ("OESP") announced by Ontario's Minister of Energy on March 26, 2015. The OESP represents a ratepayer-funded bill affordability program to be implemented by all Ontario distribution electric companies as of January 1, 2016. Appendix E to this Direct Testimony sets forth the Background Document prepared and circulated by Ontario's Minister of Energy, along with a set of Frequently Asked Questions ("FAQs") regarding the OESP prepared by the Minister's office.

According to the Minister of Energy, "the proposed Ontario Electricity Support Program would provide assistance directly to eligible low-income electric consumers. . ." The Minister's office states that "eligibility for the new program is based on two criteria: household income [and] household size." The Minister states: "based on income level and household size, those qualified would receive a predetermined credit on their electricity bills, ranging from $20 to $50 per month. For example, a family of four with an annual income of less than $28,000 would be eligible for a $38 month credit – a total of about $455 per year."

Q. WHAT WAS THE "NEED" THAT THE ONTARIO MINISTER IDENTIFIED?

A. The Ontario Minister of Energy described the "need" to be addressed by OESP as follows:

> for many low-income Ontarians, paying their monthly electricity bill can be a major and ongoing challenge. In fact, in comparison to other electricity consumers in the province, low-income Ontarians spend a proportionately higher percentage of their income on electricity each month. For example, the electricity bill for a typical household consuming 800 kilowatt hours of electricity per month represents on average ten per cent of the total income of a household with an annual income of $20,000, while amounting to only two percent or less on average of the total income of a household with an annual income of $100,000 or more in 2016.

In responding to the Ontario Minister of Energy's announcement of the OESP, Anthony Haines, president and CEO of Toronto Hydro, stated: "as the largest municipal electricity distribution utility in Canada, serving a diverse urban community, Toronto Hydro is pleased to have another assistance program available to our more vulnerable customers to help them manage their electricity costs."

The Minister's Office stated that it "consulted with social service agencies, utilities, low-income advocates, First Nations and Métis communities among others in the design of this new rate program. We also looked at programs in other jurisdictions."

Q. HOW DOES THE OESP DIFFER FROM EXISTING ENERGY ASSISTANCE PROGRAMS IN ONTARIO?

A. According to the Ontario Minister of Energy, "There is an important difference between the OESP and the currently available LEAP EFA.[64] Notably, the OESP is intended to provide *ongoing* support to low-income consumers struggling to pay their electricity bill while LEAP EFA offers *one-time* support for customers who are temporarily unable to make ends meet due to emergency or illness and have received a disconnection notice." (emphasis in original).

Q. WAS THE ONTARIO MINISTER OF ENERGY'S DECISION TO IMPLEMENT THE OESP BASED ON ANY ONTARIO ENERGY BOARD ACTION?

A. Yes. The Minister's Office responded to a report by the Ontario Energy Board ("OEB").[65] One of the important "take-aways" reported by the OEB was from a survey of Ontario ratepayers "to gauge public support for the broad objectives of the program and to help align program design with the values and expectations of ratepayers."[66] In addition, the OEB consulted with the Consumers Council of Canada and the Vulnerable

[64] "LEAP EFA" refers to Ontario's Low-income Energy Assistance Program, Emergency Financial Assistance.
[65] Ontario Energy Board (December 22, 2014). "Report of the Board: Developing an Ontario Electricity Support Program." (hereafter, OEB Report of the Board).
[66] Environics Research Group, 700 Ontario ratepayers (August 2014), as cited in OEB Report of the Board, page 6.

Energy Consumers Coalition. OEB reported that "what we heard" included that: (1) "ratepayers would support targeted assistance to low-income customers with the greatest need"; and (2) "taxes are the preferred funding option but ratepayers would be satisfied with a modest provincial charge on energy bills."[67]

The OEB considered the impact of the Low-Income Energy Assistance Program (LEAP) Emergency Financial Assistance (EFA) on its deliberations. It reported that it found, amongst other things, a need for an additional ongoing assistance program, stating:

- "Overall, the LEAP EFA program is successful at providing *emergency* relief" (emphasis added);
- "LEAP EFA does *not help* customers with chronic issues who are unable to pay their bills year-round" (emphasis added);
- "Repeat applicants appear to be using LEAP EFA to address a chronic need, rather than an emergency, demonstrating a need for an ongoing assistance program"; and
- "Even with the introduction of the OESP, there will still be a need for the LEAP EFA program."[68]

The OEB reported that it "studied low-income energy assistance programs in various jurisdictions in Canada, Australia, the United Kingdom, and the United States. We researched programs in a diverse set of geographical and regulatory conditions to explore elements that could inform a made-in-Ontario approach." The OEB reported that its findings included: (1) "benefits are often tailored to need"; (2) "assistance programs can

[67] OEB Report of the Board, at 6.
[68] OEB Report of the Board, at 8 – 9.

help improve the payment patterns of the participating customers. Results from impact analyses of existing affordability programs provide evidence of this effect"; and (3) "evaluating program success should include tracking of disconnections and payment patterns of beneficiaries."[69]

Finally, in recommending the OESP (ultimately adopted by the Ontario Minister of Energy), the OEB stated that "in developing [OEB's] recommendations, we were mindful of balancing diverse program needs, such as ensuring fairness for ratepayers, managing administrative costs and delivering meaningful, targeted assistance to those most in need."[70]

Q. PLEASE SUMMARIZE THE PURPOSE FOR WHICH YOU SUBMIT THE OESP DOCUMENTS FROM ONTARIO.

A. I submit the OESP documents from Ontario in support of three propositions. First, the Ontario results support the process I recommend in this proceeding. The Minister of Energy established the fundamental policy decision, that there should be a low-income affordability program. Having decided the "whether" question, the process of a multi-stakeholder collaboration to consider the "how" question was able to generate a positive outcome. Second, the Ontario results support, for that province, the basic needs and impacts findings that I have reached in this testimony for Manitoba as well. Third, the Ontario results find that the viability of a low-income bill affordability question is not jurisdiction-specific. While OESP is a made-in-Ontario structure, the Ontario program

[69] OEB Report of the Board, at 9. The bulk of the remainder of the OEB Report of the Board was devoted to the mechanics of the OESP recommendation. OEB Report of the Board, at 10 – 28.
[70] OEB Report of the Board, at 28.

was based on a review not only of the programs from the United States with which I am most familiar, but also a review of programs from Australia and the United Kingdom as well.[71]

C. Available Ratepayer-Funded Bill Affordability Models.

Q. PLEASE DESCRIBE THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY.

A. In this section of my testimony, I describe various models through which ratepayer-funded bill affordability programs can deliver meaningful assistance to low-income inability-to-pay customers. The order in which I present these programs should not be construed as any indication of a program preference on my part. My objective in the discussion below is to highlight the fact that there are multiple ways through which a Made-in-Manitoba bill affordability assistance can be structured.

Each program design has its strengths and has its weaknesses. Or, perhaps rather than viewing them as "strengths" and "weaknesses," each program offers unique trade-offs depending on the public policy that is deemed to be controlling.

Each of the possible program designs described below is marked, however, by the common recognition, as articulated by the Ontario Minister of Energy when he announced the OESP (which I described above): "There is an important difference between the OESP and the currently available LEAP EFA. Notably, the OESP is intended to provide *ongoing* support to low-income consumers struggling to pay their

[71] OEB Report of the Board, at 33 – 40.

electricity bill while LEAP EFA offers *one-time* support for customers who are temporarily unable to make ends meet due to emergency or illness and have received a disconnection notice." (emphasis in original).

1. "Straight" Percentage of Income Payment Plan (PIPP).

Q. PLEASE DESCRIBE WHAT YOU REFER TO AS A "STRAIGHT" PERCENTAGE OF INCOME PAYMENT PLAN (PIPP).

A. A straight percentage of income payment plan (PIPP) is a program design that has been adopted in a variety of American states (e.g., Maine, New Jersey, Ohio, Illinois) and by some Pennsylvania electric and natural gas utilities (e.g., Philadelphia Gas Works, First Energy). Irrespective of what percentage of income is deemed to be appropriate, the fundamental structure of each program involves setting the utility bill equal to a percentage of the customer's gross annual household income.

Percentage of income burdens are determined on an annual basis. Payments are determined on an individual customer basis. The "shortfall" between the bill at standard residential rates and the percentage of income PIPP bill is recovered from other ratepayers.[72]

To illustrate, let me assume a customer with an income of $8,000 and a utility that has defined an "affordable bill" to be a bill representing six percent (6%) of income. This hypothetical customer has a bill of $1,200 at standard residential rates. The customer's

[72] The "shortfall" cannot be used as a synonym for "program cost." Calculating the shortfall assumes that the entire bill would have been paid in the absence of the program, an assumption we know to be in error.

affordable payment would be set equal to $480 ($8,000 x 0.06 = $480). The "shortfall" would thus be $720 ($1,200 - $480 = $720). If the bill increases above $1,200, the shortfall grows; if the bill decreases below $1,200, the shortfall shrinks. As can be seen, the "straight PIPP" is demarcated by the fact that the customer payment is held constant (at $480 in this hypothetical), not the customer bill.

The primary advantage of the PIPP is that it explicitly takes affordability into account and sets annual bills at a level that will maximize the non-participant benefits arising from the improved collections.

2. "Fixed Credit" Percentage of Income Payment Plan.

Q. PLEASE DESCRIBE THE "FIXED CREDIT OPTION" FOR A PERCENTAGE OF INCOME PLAN.

A. The Fixed Credit Option ("FCO") is a more recent iteration of the "straight PIPP" that has been adopted in states such as Colorado (and, most recently [February 2015], by PECO Energy Company).[73] Through the FCO, it is the bill credit rather than the customer payment that remains fixed on a monthly basis. Pursuant to an FCO program, if a customer's consumption increases, the customer bears the responsibility for paying the increased usage. In contrast, if the program participant's consumption decreases, the customer keeps the benefit from the reduced bill.

The FCO is a type of percentage of income plan. The "fixed credit" is initially set by determining for individual customers what level of credit would be necessary, on an

[73] The PECO Energy FCO program design is presented in Appendix D.

annual basis, to reduce that customer's expected annual bill to an affordable percentage of income. The annual credit is then divided into monthly components to be applied to the customer's bill. If the actual bill is equal to the expected bill, the bill will fall within the affordable burden to the household.

To illustrate, let's assume the same customer as above. The customer has an annual income of $8,000 and a utility that has defined an "affordable bill" to be an annual bill representing six percent (6%) of income. This hypothetical customer has a bill of $1,200 at standard residential rates. The customer's affordable payment would be set equal to $480 ($8,000 x 0.06 = $480). The "shortfall" would thus be $720 ($1,200 - $480 = $720). Under the fixed credit option, this customer will receive a monthly credit of $60 ($720 / 12 = $60) on his/her bill. Since the credit remains fixed, if the bill increases above $1,200, the customer pays the increase; if the bill decreases below $1,200, the customer pockets the savings.

As can be seen, the "fixed credit option" is demarcated by the fact that the bill credit is held constant, not the customer bill. Under an FCO, the risk of changes in prices and consumption during the period for which the credit has been determined (generally, a one year period) is placed with the customer rather than with the utility.

The advantage of the FCO is the direct conservation signal provided to program participants. It is generally believed, also, that an FCO program design is somewhat simpler to administer than a "straight PIPP."

3. Income-Based Tiered Rate Discount.

Q. PLEASE DESCRIBE AN INCOME-BASED TIERED RATE DISCOUNT.

A. The income-based tiered rate discount ("TRD") is a program such as has been adopted by the State of New Hampshire for electric affordability assistance (and which PECO administered prior to changing to an FCO in January 2015). Under an income-based TRD, the program administrator calculates, for different levels of income, what percentage of discount would be needed to reduce an average residential bill at standard residential rates to an affordable percentage of income. Every customer with an income falling in the income tier will receive the percentage discount deemed to be appropriate, on average, for customers in that tier. If the utility operates a four-tier TRD, for example, customers with the lowest incomes (i.e., Tier 1) may receive a 60% discount for bills to be at the affordable burden on average, while customers with the highest income (i.e., Tier 4) might receive a 25% discount.[74]

To illustrate, let me assume a utility system with an average residential bill of $1,500. This utility system has created a four-tiered rate discount tied to LICO for a 3-person household ($24,745). The tiers are set at: Tier 1: 0 - 25% of LICO; Tier 2: 26 - 50% of LICO; Tier 3: 51 - 75% of LICO; and Tier 4: 76 – 100% of LICO. An affordable bill is defined to be a bill equal to 6% of income. Using the mid-points of each income range, the bill discounts would be determined as follows:

[74] The percentage discounts I am using here are presented simply for the sake of illustration. They are not proposals.

	Tier 1	Tier 2	Tier 3	Tier 4
Income mid-point for each Tier	$3,093	$9,279	$15,466	$21,652
Affordable burden (percent)	6%	6%	6%	6%
Affordable bill (dollars)	$186	$557	$928	$1,299
Average standard bill	$1,500	$1,500	$1,500	$1,500
Affordable bill as percent of standard bill	12%	37%	62%	87%
Bill discount (percent)	88%	63%	38%	13%

Under this structure, everyone who falls in Tier 1 would receive an 88% discount; everyone who falls within Tier 2 would receive a 63% discount; everyone who falls within Tier 3 would receive a 38% discount; everyone who falls within Tier 4 would receive a 13% discount. If a customer falls at the income mid-point and average standard bill, he/she would receive an affordable bill. To the extent that a customer's income varies above or below the mid-point, or to the extent that a customer's bill is above or below the average, the affordability also varies up or down accordingly.

The advantage of the income-based TRD is two-fold. First, it is easily tariffed.[75] A customer falling into Tier 1 is placed on Rate ERS-1,[76] which happens to be priced at 12% of the standard residential rate (88% discount). A customer falling into Tier 4 is placed on Rate ERS-4, which happens to be priced at 87% of the standard residential rate (13% discount). Other than taking service under a different tariff, the program participants are otherwise treated the same as a customer on the standard residential tariff.

[75] In this respect, it is no different from having separate rates for residential heating and residential non-heating service.
[76] There is no significance to the name I have given this tariff.

The advantage of the income-based TRD is its administrative simplicity. Individual bill burdens are not determined. This administrative simplicity, however, comes with somewhat of a cost. The cost is that customers in any given tier who have usage above the average are paid less than what is ideally needed to achieve affordability; customers in any given tier who have usage below the average are paid more than what is ideally needed to achieve affordability. This level of inefficiency, however, is accepted as a necessary trade-off for achieving administrative ease.

4. Income-Based "Fixed Credit" Benefit Payment.

Q. PLEASE DESCRIBE THE INCOME-BASED "FIXED CREDIT" BENEFIT PAYMENT PROGRAM.

A. The income-based fixed credit benefit payment ("FCBP") program is the Ontario Electricity Support Program ("OESP"). The historical antecedent for such an approach is the income-based tiered rate discount described immediately above. Rather than providing a percentage discount off the bill at standard rates, however, the FCBP provides a monthly fixed credit that varies based on household income (and, as in Ontario, can vary by both income ***and*** household size). The Table below shows how an income-based tiered discount is translated into fixed credits.

	Tier 1	Tier 2	Tier 3	Tier 4
Mid-point income	$3,093	$9,279	$15,466	$21,652
Affordable burden	6%	6%	6%	6%
Affordable bill	$186	$557	$928	$1,299
Average standard bill	$1,500	$1,500	$1,500	$1,500
Affordable bill as percent of standard bill	12%	37%	62%	87%
Bill discount (percent)	88%	63%	38%	13%
Bill discount ($s at average income and use)	$1,314	$943	$572	$201
Fixed monthly credit (bill discount / 12)	$110	$79	$48	$17

Under the FCBP approach, if a customer consumes at the average, and has an average income, the fixed credit will reduce the customer's bill to an affordable burden. Those customers whose consumption is above average (or income below average) will have bills that are less affordable. Likewise, those customers whose consumption is below average (or income above average) will have bills that are more affordable.

In this fashion, the FCBP (like the Tiered Rate Discount previously discussed) has some inherent inefficiency built into the program design's delivery of benefits. The inefficiency is accepted as an appropriate "cost" of simplifying the design and delivery of benefits.[77]

5. Uniform Rate Discount ("Percentage of Bill" Plan).

Q. PLEASE DESCRIBE THE UNIFORM RATE DISCOUNT ("PERCENTAGE OF BILL") AFFORDABILITY APPROACH.

A. The Flat Rate Discount is the affordability approach adopted by states such as California (its CARES program) and Massachusetts. Under this approach, all income-eligible

[77] With both the TRD and the FCBP, the level of inefficiency can be minimized by increasing the number of tiers. To the extent that an increased level of disaggregation is achieved (by increasing the number of tiers), the possible variation above or below the average within the tier is minimized.

customers receive a designated discount off the standard residential rates. In California the low-income discount is 20%, while in Massachusetts the discounts generally range from 35% to 40% depending on the utility.[78]

A uniform rate discount makes no effort to tie the amount of the discount to any determination of what an affordable bill might be. This approach comes the closest to viewing bill affordability assistance as a pure "social program." The benefit (i.e., rate discount) is provided to low-income households simply because they are low-income. The level of benefit is provided irrespective of need and with no effort to tailor the assistance to achieve some level of affordability or to generate particular payment outcomes. A customer with an income of $30,000 and a bill of $300 receives the same discount that a customer with an income of $5,000 and a bill of $1,500 receives.

Uniform discount rate discount programs represent the oldest types of bill affordability programs in the United States. Since more sophisticated models of bill affordability have since been developed, along with the recognition that assistance can (and should) be structured to achieve utility-related credit and collection benefits (if appropriately designed and targeted), no uniform rate discount program has been adopted in recent years.

6. Multi-Tiered Inclining Block Rate.

[78] The Uniform Rate Discount is sometimes referred to as a "Percentage of Bill" approach. A 20% discount, in other words, is an 80% "percentage of bill."

Q. PLEASE DESCRIBE THE USE OF MULTI-TIERED INCLINING BLOCK RATES AS AN AFFORDABLE RATE STRUCTURE.

A. An inclining block rate structure does not represent an "affordability" program in a strict sense of delivering affordable bills. An inclining block rate structure does, however, simultaneously serve the dual functions of promoting conservation and improving affordability. Most informed opinion, today, including Manitoba Hydro's own residential energy use survey,[79] agrees that low-income tends to be associated with lower consumption levels. While the consumption of low-income households may be less efficient (on a per square foot of housing basis),[80] low-income households have housing units that are sufficiently smaller such that the overall level of usage will be lower than their higher income counterparts.

Given this observation (i.e., that low income is generally associated with lower usage), inclining block rate structures will deliver lower bills to lower-income customers. I described the "hardship alleviation" objectives of an inclining block rate structure in my 2008 report for Hydro Quebec.[81] In particular, an inverted block rate tariff can promote hardship alleviation if and to the extent that the initial block is tied to a determination of a level of essential energy consumption.

[79] Manitoba Hydro (May 2010). 2009 Residential Energy Use Survey Report: Low-Income Cut-Off (LICO) Sector, at iv ("LICO customers consume less electricity than NON-LICO customers. This correlates with the findings that LICO customers tend to be single persons, seniors, apartment dwellers, residing in smaller dwellings"). See also, 2009 Residential Energy Use Survey Report, at 25 (LICO households use about 30% less electricity on an annual basis than do NON-LICO households).

[80] This conclusion makes sense, given the generally-accepted belief that lower income housing is older and less efficient, while lower-income appliances (e.g., refrigerators) also tend to be older and less efficient.

[81] Roger Colton (February 2008). "Inverted Block Tariffs and Universal Lifeline Rates: Their Use and Usability in Delivering Low-Income Rate Relief," prepared for Hydro-Quebec (Montreal).

The disadvantage of an inverted block rate tariff as an affordability strategy flows from the fact that it is totally divorced from any targeting based on need. Even a lower-priced initial block, though providing a lower bill, will not necessarily present an affordable bill to low-income customers (unless explicitly designed to provide an affordable bill at a given level of income and usage). Moreover, there will always be some number of low-income customers who are *not* also low use customers. These low-income, higher usage, customers will be affirmatively harmed by an inclining block rate tariff in the absence of a specifically designed response. In Minnesota, for example, the proponents of a multi-tier inclining block rate structure proposed energy efficiency investments targeted to high use low-income customers who would have usage falling into the upper blocks. I agree with that approach.

In contrast, the advantage of an inverted block rate tariff is that it will provide reduced bills to *all* low-income customers without need for any type of application process or income-qualification procedure. The further advantage of an inclining block rate structure is that at the same time low-income (low use) customers are receiving lower bills, it is extremely likely that those same customers are imposing lower costs on the utility system. Fewer low-income (low use) customers tend to have fewer peak-producing appliances and, those that *do* own such appliances, tend to use those appliances less frequently. There is, in other words, a traditional cost basis for providing the lower price in the initial block to all low-income (low use) customers.

Q. WHAT DO YOU CONCLUDE?

A. Based on the data and discussion I present above, I conclude that there is no single model of low-income bill affordability assistance that exists to the exclusion of all other models. While some models deliver benefits in a more appropriate fashion through a more appropriate structure,[82] there are multiple program designs from which to select (alone or in combination with each other) an appropriate program affordability approach for Manitoba. A Made-in-Manitoba affordable bill program would have ample precedent in other jurisdictions, Canadian and otherwise.

D. The Role of Arrearage Management.

Q. PLEASE DESCRIBE THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY.

A. In this section of my testimony, I explain why arrearage management is a necessary element to any response to inability-to-pay. Arrearage management, however, cannot be a stand-alone response.[83]

An arrearage management component will address the unpaid bills of inability-to-pay customers incurred during the time that bills were unaffordable. An arrearage management program, at its heart, involves a bargain with the customer. For each complete payment the customer makes of the affordable bills, a pro rata portion of the arrearages incurred during the time that bills were unaffordable will be credited to the account. After a prescribed period of time, if the inability-to-pay customer has made all

[82] See generally, Roger Colton (November 2007). "Best Practices: Low Income Rate Affordability Programs: Articulating and Applying Rating Criteria," prepared for Hydro Quebec: Montreal.
[83] See generally, Roger Colton and A. Quinn (October 1991). The ABCs of Arrearage Forgiveness, National Consumer Law Center: Boston (MA); see also, Roger Colton (March 2012). Attributes of Massachusetts Gas/Electric "Arrearage Management Programs" (2011 Program Year.

of his or her current bill payments, the pre-existing arrearage balance will have been reduced to zero.

Q. WHY IS AN ARREARAGE MANAGEMENT COMPONENT A NECESSARY COMPONENT OF A BILL AFFORDABILITY INITIATIVE?

An arrearage management program component is necessary because bill affordability is driven by the total bill, not simply by the bill for current service. It serves little function to make the bill for current service affordable if the total bill will remain unaffordable because of the pre-existing arrears.

Q. WHY IS AN ARREARAGE MANAGEMENT COMPONENT NOT A SUFFICIENT STAND-ALONE RESPONSE TO INABILITY-TO-PAY?

A. Arrearage management will not work on a stand-alone basis. Such a program does not recognize and address the reason that the arrearage balance was incurred in the first instance. To the extent that the unpaid bills were incurred because of the inability-to-pay bills for current service, a stand-alone arrearage management initiative does not address the cause of the unpaid bills. Not only is it unlikely that the current bills for service will be paid in the future, allowing customers to earn their arrearage management credits, but even should such payments be made in the short-term, the expected result would nonetheless still be that additional arrearages will be incurred in the future with the need to repeat the cycle.

Q. IS THERE A SPECIFIC ARREARAGE MANAGEMENT DESIGN THAT SHOULD BE MADE A PART OF A BILL AFFORDABILITY PROGRAM?

A. No. As with the design of the bill affordability program overall, there are design and administrative decisions that should be negotiated to develop a Made-in-Manitoba program design. Those policy decisions include, but are not necessarily limited to, the following:

- Should there be a minimum arrearage (in dollars) to trigger participation in the arrearage management program component? The program component is intended to allow customers to get even to facilitate the ability to succeed in making future payments. Some utilities have made *all* pre-program arrears subject to such a program; others limit the arrearage credits to pre-program arrears that exceed a minimum amount (e.g., $180; $240).
- Should there be a customer co-payment toward pre-existing arrears to share in the repayment of pre-existing arrears? If so, at what level should that co-payment be set? Some utilities make 100% of the pre-existing arrears subject to being erased through arrearage management credits. Other utilities require a minimum co-payment (e.g., $5/month).[84] Still other utilities set the co-payment equal to a percentage of income.
- Should there be monthly (or annual) ceilings on the amount of arrearage credits that will be granted. Some utilities have established such credits while others do not.

[84] Even a $5/month copayment, however, provides a substantial arrearage repayment over 36 months ($5/month x 36 months = $180 customer payment).

- Over what period of time should credits toward pre-existing arrears be pro-rated? Some utilities seek to have pre-existing arrears come off the books as quickly as possible (e.g., a one-year pro rated credit period), while others seek to stretch the period out further. The generally-recognized rule is that the period should not be too long. Earning arrears credits over a period of one to three years is the generally-accepted time frame.[85]
- What type of "cure" provisions should be allowed should a customer miss a payment toward his or her current service? Most, but not all, utilities provide arrearage credits when a complete payment is made, even if that complete payment is not made in a timely fashion. The policy objective is to ensure that program participants continue to make payments, even if they are partial payments or late payments. Other utilities have provided that customers will have a catch-up period. So long as all payments for a 12-month period are made within 15 months, for example, the credits for those 12-months will be provided. Still other utilities say if a program participant misses a payment, the arrearage credit that would have been provided in that month is moved to the end of the arrearage management period and the period is extended by that month.[86]

Q. WHAT DO YOU PROPOSE FOR MANITOBA HYDRO?

[85] The time period over which credits will be earned is often budget driven. The longer the period is, the smaller that annual budget amount will be required.
[86] For example, if the utility is using a 36-month arrearage credit period and a customer misses the payment in Month 17, Month 17's credit is moved to Month 37 and the period over which the complete pre-program arrears can be extinguished is extended by that one month.

A. I propose that the structure and operation of an arrearage management component be made subject to the same collaborative process I propose above for the bill affordability program as a whole.

E. Insufficiency of Energy Efficiency as a Stand-Alone Response.

Q. PLEASE DESCRIBE THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY.

A. Manitoba Hydro relies exclusively on the delivery of energy efficiency investments as the mechanism to promote affordability to inability-to-pay customers. In this section of my testimony, I explain why, even though energy efficiency investments targeted to low-income inability-to-pay customers are a necessary component of an affordable bill program, such investments are not a sufficient stand-alone response to inability-to-pay.

My discussion below should be read contrasted to the absolute failure of Manitoba Hydro to integrate its efficiency programs with customers having a demonstrated inability-to-pay problem. As I discussed above, from the 2011/2012 program year through the 2014/2015 program year (through December 2014), AEP served 6,914 participants. The AEP combined with the NHN crisis assistance program had an unduplicated participation of 15,856 customers.

During that same time period, the *total* number of AEP participants who *also* received assistance from NHN in the same year as having received AEP assistance reached eighteen (18). Even if one eliminates the requirement that NHN and AEP assistance be

provided in the same year, only 62 customers have received both NHN and AEP assistance *at any time*. There is, in other words, a negligible, bordering on non-existent, overlap between the Company's energy efficiency and crisis assistance programs.

Q. ARE THERE INHERENT PROGRAM DESIGN PROBLEMS WITH RELYING ON ENERGY EFFICIENCY AS A STAND-ALONE RESPONSE TO INABILITY-TO-PAY?

A. Yes. In this section of my testimony, I explain how and why an exclusive reliance on energy efficiency, by design, cannot effectively address the inability-to-pay problems or deliver the benefits, I identify above.

Q. PLEASE DESCRIBE THE MANITOBA HYDRO ENERGY EFFICIENCY PROGRAM DIRECTED TOWARD LOW-INCOME HOUSEHOLDS.

A. The Company's energy efficiency ("EE") program does not begin to address the efficiency needs of Manitoba Hydro's low-income population. The program includes "basic energy efficiency items such as compact fluorescent lights and low flow showerheads, air sealing materials, insulation measures, and the replacement of standard efficiency furnaces with high efficiency furnaces." (see generally, MKO-Coalition/MH-I-9). The Manitoba Hydro EE program is limited to homeowners. (MKO-Coalition/MH-i-9, at 19). The EE program has an annual participation rate of 1.8% of eligible customers. (MKO-Coalition/MH-I-9, at 21).

Q. WHAT LEVEL OF SAVINGS DOES THE MANITOBA LOW-INCOME EE PROGRAM GENERATE ON A PER-PARTICIPANT BASIS?

A. The Company's evaluation of its low-income EE program reports that it results in a savings of "about 20% of the consumption of an average home in Manitoba." (MKO-Coalition/MH-I-9, at 22). This savings percentage is, however, over-stated. The average home includes both homeowners and renters. Homeowners consistently have larger homes, and greater usage, than do renters. The percentage savings, if limited only to homeowners, in other words, would be much smaller.[87]

Q. PLEASE EXPLAIN THE FIRST REASON THAT AN ENERGY EFFICIENCY PROGRAM DIRECTED TOWARD LOW-INCOME HOUSEHOLDS CANNOT ADDRESS THE INABILITY-TO-PAY PROBLEMS UNDERLYING NONPAYMENT ON A STAND-ALONE BASIS.

A. Energy efficiency cannot deliver bill savings in the amount, or in the time frame, needed to effectively address the inability-to-pay problems leading to the nonpayment and collection issues I describe above. As just documented, the Company's low-income EE program delivers energy savings of "about 20% of the consumption of an average home in Manitoba." The ***bill*** savings, therefore, would be less than 20%, since a portion of the bill is associated with a fixed monthly customer charge that would be reduced through reduced usage.

[87] Assume hypothetically, for example, that the low-income EE program saves 1,600 kWh annually, which is 20% of an average usage of 8,000 kWh. That average usage of 8,000, however, would include renters who have smaller homes (and lower usage). If the 1,600 kWh is instead compared to the larger usage limited to homeowners, it would result in a smaller percentage savings. This observation arises because the kWh savings would remain constant (in the numerator) and the household usage would increase (in the denominator).

In contrast, Manitoba Hydro reports that from January 2012 to December 2014, the initial downpayment alone on deferred payment plans ranged from a minimum of $240 (September 2012) to a maximum of $381 (March 2014). The average downpayment is not only large, but increasing as well. The average downpayment on a payment plan was $270 in 2012; $319 in 2013; and $330 in 2014. (GAC/MH-I-38). The low-income EE program, with its 20% energy savings (and lower bill savings) cannot bring such payments to an affordable level.

Similarly, the monthly installments on a deferred payment arrangement over the multi-year period ranged from a low of $250/month to a high of $394 per month. Moreover, the average monthly installment on a Manitoba Hydro payment plan increased from $304 in 2012, to $325 per month in 2013; to $336 per month in 2014. As can be seen, the 20% usage reduction, yielding a bill savings lower than 20%, would not be sufficient to offset the increased bill associated with the payment plan, let alone be sufficient to bring the bill for current service (which yielded the nonpayment in the first instance) down to a level where it might be payable. The data is set forth in Schedule RDC-4. Even given a bill savings of 20%, the data shows, the bill reduction would come nowhere close to allowing a low-income inability-to-pay customer to cover either a payment plan downpayment or a payment plan monthly installment.

Q. PLEASE EXPLAIN THE SECOND REASON THAT THE ENERGY EFFICIENCY PROGRAM DIRECTED TOWARD LOW-INCOME

HOUSEHOLDS CANNOT ADDRESS THE INABILITY-TO-PAY PROBLEMS UNDERLYING NONPAYMENT ON A STAND-ALONE BASIS.

A. Manitoba Hydro's low-income EE budget is insufficiently funded to serve as a stand-alone response to the bill unaffordability faced by the Company's low-income inability-to-pay customers. According to the Company, the "target market" for the low-income EE program reaches 115,227 customers, 105,415 of which are homeowners. (GAC/MH-I-33(a) (revised)). The program, in other words, almost completely ignores rental units. In contrast, for the three program years 2011/2012, 2012/2013 and 2013/2014, the Company's low-income EE program served, on average, 1,870 low-income customers.[88] If the program were to continue to serve low-income customers at this same rate, and if no-one ever needed to be *re*-treated, and if renters continued to be excluded from the program, and if the poverty rate in the Manitoba Hydro service territory remained constant, it would take Manitoba Hydro nearly 62 years to reach all low-income customers. (115,227 / 1,870 = 61.6). The low-income EE program cannot serve as a stand-alone affordability initiative.

Q. PLEASE EXPLAIN THE THIRD REASON THAT THE ENERGY EFFICIENCY PROGRAM DIRECTED TOWARD LOW-INCOME HOUSEHOLDS CANNOT ADDRESS THE INABILITY-TO-PAY PROBLEMS UNDERLYING NONPAYMENT ON A STAND-ALONE BASIS.

A. A low-income EE program could not adequately serve as a stand-alone bill affordability program because the savings required to reduce actual consumption for high-use

[88] Since 2014/2015 was an incomplete year, the participation figures for that program year were excluded. Through December 2014, the participation was 1,964, roughly equivalent to previous years.

customers to just the average consumption for residential accounts would be more than could reasonably be delivered; moreover, average consumption would not necessarily yield an "affordable" bill. Average consumption during the non-heating months of June through October was 825 kWh for non-heating customers and was 1,144 kWh for heating customers. (GAC/MH-I-65(a)).

The task of reducing monthly consumption simply to the average, setting aside whether the average usage would result in an affordable bill (or whether heating treatments could sufficiently reduce heating bills), is beyond the capacity of the low-income EE program to achieve. As shown immediately below, reducing usage from 1,100 kWh per month to the non-heating average of 826 would require a greater savings than the Company's low-income EE program delivers. For non-heating accounts, a reduction from an existing monthly usage of 1,600 kWh to the average would require a 48% reduction; it would require a 54% reduction from an existing monthly consumption of 1,800 kWh; it would require a 59% reduction from an existing monthly consumption of 2,000.

		Percentage Usage Reduction Needed to Reach Average from Various Usage Levels (compared to AEP 20% Average Usage Reduction)			
	Average Use	1,100	1,600	1,800	2,000
Non-heating accounts	826	25%	48%	54%	59%
Heating accounts	1,144	xxx	29%	36%	43%

Similarly, the usage reduction required from commonly seen consumption amounts for heating accounts would require a larger savings than the 20% usage reduction which the low-income EE program delivers. It would require a 29% reduction from 1,600 kWh; a 36% reduction from 1,800 kWh; and a 43% reduction from 2,000 kWh. All are far

beyond the 20% savings actually generated by Manitoba Hydro's low-income EE program.

Q. ARE THESE USAGE AMOUNTS COMMONLY SEEN ON THE MANITOBA HYDRO SYSTEM?

A. Yes. These usage amounts are commonly achieved during these five non-heating months. Recognizing that Manitoba Hydro could not provide data specific to low-income customers, but only for residential customers as a whole, the Company had the following penetrations of high usage residential customers (GAC/MH-I-30(b)).

Number of accounts	June	July	August	September	October
More than 1100	132,932	139,147	165,696	125,240	168,236
More than 1600	83,189	86,889	108,510	76,127	116,393
More than 1800	45,863	47,100	60,572	40,090	69,324
More than 2000	34,813	35,176	45,197	29,561	53,314
		Percentage of Accounts			
More than 1100	28%	30%	35%	27%	36%
More than 1600	18%	19%	23%	16%	25%
More than 1800	10%	10%	13%	9%	15%
More than 2000	7%	8%	10%	6%	11%

Q. PLEASE SUMMARIZE.

A. Usage reduction cannot serve as the exclusive mechanism which Manitoba Hydro relies upon to deliver affordability assistance to inability-to-pay customers. The energy efficiency needs of the Company's low-income customers far outstrip the ability of the Company to deliver. On the one hand, the number of low-income customers with bills sufficiently high to indicate the probable need for efficiency investments is so large as to be beyond the reach of the Company in a reasonable time frame. On the other hand, a substantial number of low-income customers have bills that, even with reasonably

expected usage reductions accruing from efficiency investments, could not be reduced to an affordable level.

Q. DOES DELIVERING ENERGY EFFICIENCY TO LOW-INCOME CUSTOMERS PLAY A ROLE IN RESPONDING TO INABILITY-TO-PAY?

A. Yes. Delivering energy efficiency investments to low-income customers has a role to play in responding to inability-to-pay, but it cannot be the ***exclusive*** mechanism of response. Efficiency investments can be an effective tool to use in reducing low-income energy needs for some, but not all, households.

Energy efficiency investments are an effective ***supplement*** to the distribution of bill affordability assistance to address low-income energy needs over the long term. Energy efficiency provides continuing benefits year-in and year-out. Investments in residential energy efficiency help deliver efficient end-uses to consumers. In both the medium- and long-term, energy efficiency will reduce the costs of certain bill affordability program designs.

A multi-state study of affordability programs in the United States, of which I was a co-author, found that "every state that has adopted a home energy affordability program has incorporated an energy efficiency component into that affordability initiative." The study found that "these [low-income efficiency] programs can effectively complement the

impacts of affordability programs."[89] They cannot, however, serve as a stand-alone response.

Q. DOES SUBSIDIZED FUEL-SWITCHING PLAY A ROLE IN THESE TARGETED ENERGY EFFICIENCY INVESTMENTS?

A. Yes. Manitoba Hydro's own data demonstrates that considerable fuel cost savings can be achieved by switching from electric heat to natural gas with a high-e furnace or geothermal if the front-end capital costs can be appropriately financially supported. (GAC/MH-I-66). While annual space heating costs for an average single-family residence from an electric furnace (or baseboard heating) will reach $1,226, a mid-efficiency natural gas furnace would lower that annual heating cost to $744 while a high-efficiency gas furnace would lower that annual cost to $669. (GAC/MH-I-66(a), Attachment 1, page 1). A ground source heat pump would lower the annual costs even more. (Id.)

Similar results appertain to fuel switching for domestic water heating. Annual hot water costs (for a 2.4 person household) using electricity as the heating fuel range from $267 to $279. Those annual costs could be reduced to between $92 and $140 for natural gas hot water heating. (GAC/MH-I-66(a), Attachment 1, page 1).

Even in regions where natural gas is available as a heating fuel source, households with incomes at or below 125% of LICO disproportionately use electricity as a heating source.

[89]Carroll, Colton and Berger (2007). Ratepayer Funded Low-Income Energy Programs: Performance and Possibilities, at 132, Apprise, Inc.: Princeton (NJ).

(GAC/MH-I-66(c)). Moreover, disproportionately fewer of the LICO125 population use high-efficiency gas furnaces. (Id.) To the extent that the front-end capital costs could be cost-effectively eliminated as an impediment to installation, there would appear to be a potential for fuel-switching to supplement other energy efficiency investments for this population.

F. The Inter-Relationship between Inability-to-Pay Interventions.

Q. PLEASE EXPLAIN THE SIGNIFICANCE OF YOUR COMMENTS THAT INTERVENTIONS SUCH AS ARREARAGE MANAGEMENT, ENERGY EFFICIENCY AND FUEL SWITCHING ARE NOT ADEQUATE STAND-ALONE RESPONSES TO INABILITY-TO-PAY.

A. Manitoba Hydro should, as a matter of reasonable and prudent utility management, be required to employ a cost-effective suite of responses to inability-to-pay. That suite of responses should include a bill affordability program, just as it includes budget billing, service disconnections for nonpayment, energy efficiency, fuel switching, deferred payment plans and the like.

What I have demonstrated above is that pursuing the existing suite of responses not only *is* not working, but that existing the suite of responses *cannot* work cost-effectively given the inability-to-pay of a substantial segment of Manitoba Hydro's residential population.

Q. DO YOU PROPOSE BILL AFFORDABILITY ASSISTANCE TO THE EXCLUSION OF EXISTING COLLECTION PRACTICES AND OTHE PROGRAMS?

A. No. The whole point is to get people to the point where they can pay their bills and where Manitoba Hydro can collect those bills in the most cost-effective way possible. If Manitoba Hydro can get low-income people to pay their bills without needing to spend money on a bill affordability discount, that's an improvement in cost-effectiveness.

If, in other words, we can put people on budget bills and get them to improve their payments, we improve their payment coverage ratio (*and* we improve their Net Back because we are *collecting* more without *spending* more money). If we can use energy efficiency (and/or fuel switching) to make bills affordable (and thus allow people to make their payments), we are going to improve the collection productivity measures.

Q. PLEASE RELATE YOUR CONCLUSIONS BACK TO YOUR OPENING DISCUSSION ABOUT THE ADVENT OF UTILITY-FUNDED USAGE REDUCTION PROGRAMS.

A. Just as utility regulation moved 25 years ago to an acceptance of the realization that utilities had a critical role to play in funding people *not* to buy their product, and that this was sound business policy, the notion of thinking of inability-to-pay as a business problem represents a new way of thinking. Within that framework, Manitoba Hydro would continue to use existing collection strategies. However, the Company would not use energy efficiency (or budget bills or payment plans or fuel switching) for the purpose

of avoiding the payment of bill assistance. Manitoba Hydro would use those strategies only if, and only to the extent, that they are better tools to help people pay. And the fact that they are "better tools" would need to be demonstrated by the fact that they will allow people to pay more with less collection effort (i.e., be more cost-effective). When they are *not* better tools (as measured by cost-effectiveness) in those instances where non-payment is driven by inability-to-pay, Manitoba Hydro should have an additional strategy to employ. That strategy is a bill affordability program.

Within this framework, cost-effectiveness limits as well as enables, bill affordability assistance. In other words, if Manitoba Hydro were to insist on providing bill assistance where it is not needed, what it would be doing is spending money while getting no additional beneficial payment outcomes. Throughout my testimony, I have demonstrated that what Manitoba Hydro is doing today is not cost-effective because the Company is expending effort and getting poor payment results (because it is not addressing the underlying problem of inability-to-pay). That's objectionable.

The flipside, however, is *also* objectionable (to spend effort and get no results because the payment results would happen *even without* the expenditure of effort). So, just as I have objected to the fact that Manitoba Hydro says that it will ignore bill affordability assistance, *on the same basis*, I would object to someone who would argue that there should be bill affordability assistance while ignoring the role of everything else.

In essence, these are two sides to the same argument. On the one hand, I object when Manitoba Hydro spends money that is *insufficient* to get a result (the present situation) (costs but no benefits). On the other hand, I would *also* object to spending money that is *unnecessary* to get a result (results that would arise in any event) (costs but no benefits).

In this light, rather than defining the precise bill affordability program to be pursued, I have recommended a collaborative process to determine what form a Made-in-Manitoba bill affordability program should take. The inter-action of the various pieces of that suite of inability-to-pay responses should arise from that collaborative effort.

Part 4. Summary of Recommendations.

Q. PLEASE SUMMARIZE THE RECOMMENDATIONS YOU MAKE IN YOUR DIRECT TESTIMONY.

A. Based on the data and analysis I present in my Direct Testimony above, I recommend that:

1) ***The PUB find*** Manitoba Hydro exhibits substantial and deteriorating payment problems, the most intractable of which are associated with low-income inability-to-pay customers.

2) ***The PUB find*** that existing Manitoba Hydro credit and collection planning and activities do not reasonably and prudently address the inability-to-pay problems reflected in the payment patterns facing the utility.

3) ***The PUB find*** that inability-to-pay assistance limited to providing emergency crisis assistance does not meet the needs of low-income inability-to-pay customers.

4) ***The PUB find*** that the implementation of a well-designed and appropriately implemented ongoing targeted bill affordability program can have positive

impacts on the payment patterns and practices of low-income inability-to-pay customers.

5) ***The PUB find*** that sufficient experience and learning exists in Canada, the United States, Great Britain and Australia from which a multi-stakeholder collaborative process can draw to develop a Made-in-Manitoba bill affordability program.

6) ***The PUB find*** that an inherent design element of any bill affordability program involves determining and incorporating the interaction of bill assistance with existing practices, ranging from credit and collection procedures to the delivery of energy efficiency measures.

7) ***The PUB order*** that the issue of how to implement an ongoing bill affordability program for Manitoba Hydro be subject to a multi-stakeholder collaborative process under the mediation direction of PUB Staff.

8) ***The PUB order*** that the collaborative process be complete no later than one year after the final order in this proceeding unless an extension is agreed to be the parties or ordered by the Board.

9) ***The PUB order*** that upon completion of the collaborative process, a Final Collaboration Report shall be submitted to the Board, stating therein the areas of agreement between parties on how to implement a bill affordability program, along with an identification of the areas of disagreement.

10) ***The PUB order*** that upon receipt of the Final Collaboration Report, the Board will initiate further proceedings, the precise structure of which will be determined at the time based on the nature and extent of disagreements, to resolve the disagreements.

Ultimately, based on the data and discussion above, I recommend that the PUB find, as the Pennsylvania PUC also found more than 20 years ago, that "for the poorest households. . ., existing initiatives do not enable these customers to pay their bills in full and to keep their service. . .Consequently, to address realistically these customers' problems and to stop repeating a wasteful cycle of consecutive, unrealistic payment agreements that cannot be kept, despite the best of intentions, followed by service

termination, then restoration, and then more unrealistic agreements, we believe that new approaches. . . should be tried."

Q. GIVEN YOUR DISCUSSION ABOVE, IS IT FAIR TO CONCLUDE THAT YOUR RECOMMENDATION IS TO USE RATEPAYER-FUNDED BILL ASSISTANCE AS THE TOOL OF FIRST RESORT IN RESPONDING TO INABILITY-TO-PAY?

A. No. At no point have I suggested that conclusion, let alone made that recommendation. Ratepayer-funded assistance is one tool, but clearly not the exclusive tool, in responding to inability-to-pay. My conclusion above is that it is unreasonable to exclude a bill assistance program as one of the available tools based on an out-moded and economically flawed conclusion that inability-to-pay is only a "social" problem. To the extent that energy efficiency can reduce bills to an affordable burden, bill assistance is not needed (which is why I, along with others, have concluded that energy efficiency investments are always a necessary complement to a bill affordability program). To the extent that public funds (through a social assistance program) are available to pay the bills of inability-to-pay customers, ratepayer-provided funds through a bill assistance program are not needed.[90] To the extent that a customer faces an arrearage balance because of an emergency situation, but otherwise has an ability-to-pay, a crisis assistance program is appropriate and ongoing assistance is not needed. To the extent that a customer faces

[90] This is one reason why bill affordability assistance in places such as New Jersey, Colorado, Illinois and elsewhere is provided to the net low-income bill, the bill remaining after fuel assistance is applied to the account. It is also one reason why, in the United States, households receiving "utility allowances" from the federal Department of Housing and Urban Development ("HUD") designed to pay their utility bills are either excluded from bill affordability programs, or provided minimum grants.

seasonal unaffordability, but has adequate income to pay *annual* bills, a levelized budget bill is appropriate.

Having said that, however, we *know* from the discussion above that energy efficiency investments and public assistance are not adequate unto themselves. Those initiatives occur today and *despite those programs*, the Company is failing to address its inability-to-pay problem. There is a population of customers with chronic inability-to-pay problems –totaling tens of thousands of customers-- that, in the best of circumstances and irrespective of how well designed or administered the programs I just mentioned are, will not be adequately served.

The question, therefore, is how to identify those customers who need ongoing assistance, and to determine what type of ongoing bill assistance can best serve those customers to the benefit of both those customers and the ratepayer population as a whole. Using the collaborative process I recommend to develop a Made-in-Manitoba bill assistance program to supplement this public assistance, energy efficiency investments, crisis assistance, and payment terms, is not only a reasonable step to take, but is a necessary step to take.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes, it does.

Colton Schedules

Total Dollars of Residential Arrears ($1,000s)

Heating	2012	2014	Change		Non-heating	2012	2014	Change	
January	xxx	$12,834	xxx	Xxx	January	xxx	$5,409	xxx	xxx
February	$12,618	$16,475	$3,857	31%	February	$6,754	$6,760	$6	0.1%
March	$13,134	$18,125	$4,991	38%	March	$6,738	$7,318	$580	9%
April	$13,231	$17,699	$4,468	34%	April	$6,751	$7,230	$479	7%
May	$11,998	$16,717	$4,719	39%	May	$6,231	$7,046	$815	13%
June	$10,663	$14,485	$3,822	36%	June	$5,734	$6,179	$445	8%
July	$9,713	$12,098	$2,385	25%	July	$5,384	$5,281	-$103	-2%
August	$8,808	$10,668	$1,860	21%	August	$5,355	$5,264	-$91	-2%
September	$8,506	$9,632	$1,126	13%	September	$5,399	$5,355	-$44	-1%
October	$8,158	$8,475	$317	4%	October	$4,871	$4,416	-$455	-9%
November	$8,818	$9,086	$268	3%	November	$4,721	$4,745	$24	1%
December	$10,865	$10,661	-$204	-2%	December	$5,670	$5,236	-$434	-8%

SOURCE: GAC/MH-I-7(d).

Number of Active Residential Accounts by Size of Monthly Arrears

	Arrears Over $1,000			Arrears over $1,500			Arrears over $2,000		
	2012	2014	Change	2012	2014	Change	2012	2014	Change
February	3,113	4,138	1,025	1,702	2,076	374	1,137	1,315	178
March	3,631	5,161	1,530	1,930	2,650	720	1,273	1,577	304
April	3,693	5,049	1,356	2,026	2,810	784	1,322	1,721	399
May	3,329	4,598	1,269	1,915	2,654	739	1,241	1,689	448
June	2,726	3,658	932	1,702	2,186	484	1,119	1,474	355
July	2,458	2,895	437	1,593	1,856	263	1,049	1,292	243
August	2,186	2,391	205	1,391	1,613	222	976	1,138	162
September	1,975	2,018	43	1,275	1,379	104	902	1,001	99
October	1,801	1,664	-137	1,190	1,178	-12	872	870	-2
November	1,857	1,674	-183	1,206	1,167	-39	879	883	4
December	2,191	1,840	-351	1,339	1,219	-120	934	897	-37
Average Monthly	2,633	3,189	xxx	1,570	1,890	xxx	1,064	1,260	xxx

SOURCE: MMF/MH-I-45(c).

Lack of Response to Manitoba Hydro Residential Notice of Disconnection for Non-payment
Of Residential Accounts Receiving a Disconnection Notice

		Not Disconnected Even though Continued to Carry Arrears of Sufficient Size or Age to Trigger Disconnection	Not Disconnected Because Customer Paid less than Full but Sufficient to Avoid Disconnection	Made $0 Payment toward Account Balance After Receipt of Disconnect Notice and Prior to Issuance of Next Bill
2013	January	xxx	3,369	xxx
2013	February	xxx	4,272	xxx
2013	March	10,157	3,026	2,206
2013	April	13,981	2,882	3,147
2013	May	11,173	1,828	2,153
2013	June	11,205	1,241	2,120
2013	July	8,768	1,198	1,465
2013	August	6,232	1,311	1,499
2013	September	6,465	929	1,393
2013	October	5,915	1,264	770
2013	November	4,228	1,568	876
2013	December	5,641	2,240	1,439
2014	January	6,913	4,352	1,591
2014	February	6,831	5,427	1,750
2014	March	11,615	3,788	2,896
2014	April	14,214	3,635	2,871
2014	May	10,614	2,718	2,594
2014	June	11,346	1,719	2,219
2014	July	9,444	1,699	2,161
2014	August	6,410	1,800	2,152
2014	September	6,698	1,249	1,628
2014	October	6,152	1,353	1,137
2014	November	4,304	3,369	1,272
2014	December	5,015	4,272	1,456
2013	Monthly average	8,377	2,132	1,707
2014	Monthly average	8,581	2,774	2,039

SOURCE: GAC/MH-I-44(e), 44(f) and 44(g).

	2013					2014			
Heating	Avg Arrears	Avg Tot Bill (accts in arrears)	Bill for Current Service (accts in arrears)	20% Bill Svgs	Heating	Avg Arrears	Avg Tot Bill (accts in arrears)	Bill for Current Service (accts in arrears)	20% Bill Svgs
January	$506.59	$795.24	$288.65	$57.73	January	$512.79	$828.68	$315.89	$63.18
February	$568.94	$855.79	$286.85	$57.37	February	$575.63	$873.96	$298.33	$59.67
March	$620.56	$858.30	$237.74	$47.55	March	$634.53	$903.78	$269.25	$53.85
April	$619.48	$843.64	$224.16	$44.83	April	$633.73	$864.59	$230.86	$46.17
May	$591.08	$742.09	$151.01	$30.20	May	$591.26	$756.01	$164.75	$32.95
June	$526.99	$634.16	$107.17	$21.43	June	$532.73	$644.64	$111.91	$22.38
July	$493.61	$584.34	$90.73	$18.15	July	$495.04	$591.81	$96.77	$19.35
August	$460.60	$549.23	$88.63	$17.73	August	$451.95	$546.96	$95.01	$19.00
September	$427.27	$517.62	$90.35	$18.07	September	$429.92	$519.33	$89.41	$17.88
October	$417.55	$531.28	$113.73	$22.75	October	$429.76	$547.18	$117.42	$23.48
November	$416.29	$589.30	$173.01	$34.60	November	$413.76	$581.18	$167.42	$33.48
December	$444.57	$692.30	$247.73	$49.55	December	$445.73	$686.69	$240.96	$48.19

Non-heating	Avg Arrears	Avg Tot Bill (accts in arrears)	Bill for Current Service (accts in arrears)	20% Bill Svgs	Non-heating	Avg Arrears	Avg Tot Bill (accts in arrears)	Bill for Current Service (accts in arrears)	20% Bill Svgs
January	$175.52	$278.91	$103.39	$20.68	January	$164.11	$272.88	$108.77	$21.75
February	$192.74	$295.32	$102.58	$20.52	February	$187.77	$295.08	$107.31	$21.46
March	$205.85	$292.92	$87.07	$17.41	March	$202.85	$300.02	$97.17	$19.43
April	$201.71	$287.12	$85.41	$17.08	April	$200.38	$290.00	$89.62	$17.92
May	$190.50	$258.98	$68.48	$13.70	May	$191.81	$265.92	$74.11	$14.82
June	$172.36	$233.81	$61.45	$12.29	June	$173.52	$239.15	$65.63	$13.13
July	$158.68	$228.32	$69.64	$13.93	July	$159.86	$228.22	$68.36	$13.67
August	$153.02	$218.65	$65.63	$13.13	August	$151.58	$226.94	$75.36	$15.07
September	$146.85	$218.48	$71.63	$14.33	September	$154.38	$216.76	$62.38	$12.48
October	$144.08	$208.15	$64.07	$12.81	October	$142.94	$209.95	$67.01	$13.40
November	$140.75	$214.85	$74.10	$14.82	November	$145.10	$218.10	$73.00	$14.60
December	$149.01	$238.08	$89.07	$17.81	December	$154.74	$243.55	$88.81	$17.76

Colton Appendices