TESTIMONY OF JERROLD OPPENHEIM

For Consumers Association of Canada (Manitoba) Inc. (CAC)

Centra Gas GRA 2013/14

Pre-Filed Evidence of Jerrold Oppenheim

Regarding

Centra Gas Manitoba Inc.
2013/2014 General Rate Application

Lower Income Energy Efficiency

on behalf of
Consumers' Association of Canada (Manitoba) Inc. ('CAC')

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A. INTRODUCTION

A. Identification

My name is Jerrold Oppenheim. My business address is 57 Middle Street, Gloucester, Massachusetts USA. As described in more detail in my resume, I have worked on consumer and low-income energy and other issues for more than forty years. After graduating Harvard College and Boston College Law School, I led utility litigation for Attorneys General in New York State and Massachusetts; for Legal Services in Boston, Chicago and New York City; and for the National Consumer Law Center. I was the founding Director of Renewable Energy Technology Analysis at Pace University Law School and am currently a member of the Center for Public Utilities Advisory Council, New Mexico State University.

I have often worked as a lawyer on these issues and also as a consultant, analyst, and expert witness. My clients have included low-income advocacy and efficiency implementation agencies, consumer and environmental groups, industrial customer groups, labor organizations, government agencies, and utilities. As examples of my work, I successfully negotiated nation-leading protections for consumers and low-income families in the Massachusetts and Connecticut electricity restructuring statutes, as well as in the more recent Massachusetts Greenhouse Communities Act, and, for about 25 years, have led pioneering ongoing negotiations of energy efficiency agreements with all electric and gas utilities in Massachusetts. With Theo MacGregor, I lead similar successful negotiations of low-income energy efficiency programs in Arkansas and have also designed and analyzed low-income programs in the District of Columbia.

I have also published many papers in North America and abroad and am co-author of the book, Democracy And Regulation (London: Pluto 2003), awarded the Upton Sinclair Freedom of Expression Award by the American Civil Liberties Union. My papers have been published by, among others, The Electricity Journal, the National Association of Regulatory Utility Commissioners (NARUC), the National Council on Competition and the Electric Industry, Entergy Corp., the National Consumer Law Center (NCLC), the UN's International Labor Office (ILO), the European Federation of Public Service Unions (EPSU), The Bergen Conference (Norway), and the European Trade Union Institute (ETUI). A list of my publications is attached to my resume. Many of them may be found at the web site I maintain with Theo MacGregor, www.DemocracyAndRegulation.com.

B. Summary of Testimony

While it is obvious that considerable and commendable attention and responsiveness have gone into designing Centra's low-income energy efficiency programs for natural gas, after five years their implementation has not been successful and the directives of this Board have been largely ignored.

The principal gaps are in the pace of implementation and evaluation of results. The purpose of this testimony is to propose a substantial expansion of the scale, scope, and comprehensiveness of the lower income Furnace Replacement Program to reach the Board's goals, including service to tenants. Independent impact evaluation is needed to assess results using up-to-date methods and a current process evaluation is needed to assess program effectiveness. Plans for evaluation should be prepared as soon as possible. In addition, bill assistance should be substantially enhanced and an accurate assessment of current conditions is needed to design the lower income insulation program.

In summary, my recommendations are as follows:

1. In view of the Company's five-year failure to successfully operate the Furnace Replacement Program, the Board should oversee the Company's contractual agreement with a separate, community-based energy efficiency agency to implement the lower income programs. This agency should be given control over all existing Centra lower income efficiency programs, marketing, and funds as well as the annual Company contributions to them, with instructions to implement the lower income programs as previously ordered by the Board.

2. The Board should increase the annual funding of the Furnace Replacement Program by $250,000, to $4.05 million, for the next six years, in order to achieve the Board's original full replacement goal by September 2019.

3. The Furnace Replacement Program co-payment should be cut by at least 50%.

4. The Board should investigate the Company's level of administrative expense in the Furnace Replacement Program.

5. The Board should order the Company to hire an independent engineering contractor to conduct a physical survey of the present condition of lower income household insulation, under the supervision of the community-based energy efficiency agency. Once a baseline is thus established, the Board should order the Company to fund a program to insulate all inadequately insulated lower income homes over the next ten years. The program should be implemented by the same community-based energy efficiency agency as implements the furnace program.

6. The Company should be ordered to establish a budget for lower income rental buildings, with program development undertaken by the community-based energy efficiency agency.

7. The promotion of PAYS to lower income tenants should be terminated.

8. The Board should order the Company to contract for independent process and impact evaluations forthwith, and allow for review and public comment on and Board approval of the impact and process evaluation plans. Between 3% and 5% of program budgets should be allotted for this purpose. Programs should be adjusted to assure all needed evaluation data are collected. After the evaluations are completed, programs should be adjusted to take evaluation findings into account.

9. The process evaluation should be undertaken to evaluate the effectiveness of program design in achieving program goals. In doing so, the process evaluation should review at least program operations, Centra's application of the recommendations of the Dunsky Report, quality controls, and methods of savings verification.

10. The impact evaluation should use established methods to assess engineering estimates and should use a risk-free discount rate.

11. The implications of bill assistance to lower income customers should be further investigated.

II. THE COMPANY IS NOT IN COMPLIANCE WITH BOARD ORDERS REGARDING THE PACE AND SCALE OF THE FURNACE REPLACEMENT PROGRAM AND CONDUCT OF A NEIGHBORHOOD DEMOGRAPHIC STUDY

A. Summary of Board orders

In the evidence we filed in the Company's 2009/2010 & 2010/2011 General Rate Application (GRA), we testified that we "agree with the Board that the pace of the Lower Income Efficient Furnace Replace Program is inadequate" and recommended "that the scale, scope, and duration of the heating system program be significantly expanded so that all homes with standard efficiency heating systems not now scheduled for heating system replacement are targeted for furnace or boiler replacement over the next five years." (Pre-Filed Evidence of J. Oppenheim in 2009/10& 2010/11 GRA at 3; *see id.* at 3 *et seq.*) The Board declined to extend its goal regarding furnaces to include boilers, and set a goal of ten years rather than five, but agreed that the program pace was much too slow.

This is not a new issue, as the Board has previously recognized:

> Although MH is beginning to address the issue of energy poverty, more is required. *** Based on the current pace of MH's low-income DSM programs, the Corporation's spending over the next three years on low-income programs will not put a dent in the problem, and, at best, address only a very small fraction of low-income households. At the proposed pace of the program, it would take decades to obtain a significant level of participation of low-income households in MH's energy efficiency programs. (Order No. 116/08 at 225.)

By the time of the subsequent GRA, Centra had not significantly improved the pace of its lower income programs.

> **Board Finding – Lower-income Energy Efficiency Program**
> The Board is … dissatisfied with the pace of actions undertaken.
>
> * * *
>
> The Board concludes that lower-income consumers are not now clamouring to take advantage of the FRP because they do not know about it, and that this situation strongly

> suggests that Centra's efforts to promote the program are inadequate and require bolstering. Therefore, the Board will direct Centra to develop a revised marketing and promotional plan for the LIEEP and FRP, designed to encourage lower-income consumers to participate.
> [Order 128/09 at 32-33.]

Centra has not completed a demographic study to gain additional data and determine with increased precision the specific geographic locations of lower-income customers. The Board's Directive 13 from Order 99/07 directed that:

> *Centra undertake a demographic study to further understand the economic parameters of lower income household status, and establish targeted groups for various low-income program measures, and file the study with the Board no later than February 28, 2008.*
>
> At a Lower-Income Technical Conference hosted by MH in January 2008, it was MH's understanding that the consensus among conference participants was that sufficient demographic data exist, and that additional studies are not required. Accordingly, Centra requested that the Board consider this directive fulfilled.
>
> * * *
>
> Centra has stated that it does not know which customers are lower-income and which of those have standard efficiency furnaces. The Board holds that this information is important and can and should be obtained, being exactly the type of demographic data that the Board wanted Centra to gather with the demographic study ordered by the Board in the Order that followed the last GRA. Centra stated that their estimate of the numbers of each furnace type was based on a 2003 survey.
>
> As such, the Board rejects Centra's request to consider this directive satisfied, and reiterates the directive that Centra undertake a demographic study to assist the Utility in replacing standard furnaces with high-efficiency

furnaces in the homes of lower-income households. The demographic study should attempt to determine or identify the following:

- The number of lower income consumers;
- The numbers of standard, mid-efficiency, and high efficiency furnaces and boilers among lower income consumers;
- The type of housing for lower income consumers (single, multi-unit, townhouse, mobile, owned, rented);
- The neighbourhoods where lower income consumers reside in order that targeted mailings and other marketing activities can be directed where they will be best received; and
- Any relationship between consumption and income levels.

The Board sets a deadline of December 31, 2009 to undertake and file the demographic study. The short time frame is necessary due to the expected expiry of certain federal assistance programs. [Order 128/09 at 29, 34.]

* * *

IT IS THEREFORE RECOMMENDED THAT: … Centra improve the marketing and reach of its FRP, but failing any demonstrable improvement in the take-up and participation in the FRP, Centra and MH should consider the formation of a separate energy efficiency agency that would be dedicated to the delivery of Centra's DSM and LIEEP programming. [Order 128/09 at 134.]

*** * ***

IT IS THEREFORE ORDERED THAT: … The Board directs that Centra continue to fund the FRP in the amount of $3.8 million per year through rates to the SGS class. $3.8 million is to accrue to the FRP account regardless of the weather impact on revenues. The FRP is to continue at this level of funding beyond the test years until such time as Centra receives alternative direction from the Board, and any unspent funds are to accrue interest at Centra's actual short term interest rate; [135-136]

Yet, as described below, the Company's decades-to-complete pace continues. We agree with the Board's last two orders that the pace of the Lower Income Efficient Furnace Replace Program continues to be inadequate.

We propose that the scale, scope, and duration of the heating system program be significantly enhanced so that all homes with standard efficiency heating systems not now scheduled for heating system replacement are targeted for furnace replacement over the next six years, as originally scheduled by the Board. As the Board has repeatedly observed, an adequate lower income program requires serious efforts at targeted marketing which requires both neighbourhood-level demographics and a marketing plan based thereon. The evidence shows that Centra has been slow to begin compliance with Board directives concerning demographic studies and marketing, and has never complied with Board orders regarding program pace.

B. Company performance has been inadequate.

The Company has not successfully implemented the Furnace Replacement Program. While only 3.2% of LICO-125 customers participate in the Lower Income Energy Efficiency Program, the comparable penetration rate for non-low-income customers in residential programs is more than 14 times higher, 45.5%. (2009 Residential Energy Use Survey Report, Low Income Cut-Off Sector, at 48-49.) The Company's reports show that, even after some ramp-up of lower income spending, the Company's annual expenditures on the Furnace Replacement Program are less than half that ordered by the Board, $1.79 million for the year ended September 2012 rather than the ordered $3.8 million. Spending was only $1.6 million in the 2011/2012 fiscal year and is never planned to increase beyond $2.33 million (PUB/Centra I- 54b) – still 39% below the Board's four-year-old Order, even if achieved. As a result, the number of furnace installations is projected to be the same in 2012/13 as in 2011/12 (660 and 662, respectively) despite a projected increase in spending; projected installations do increase for 2013/14 but decline 8% in 2014/15 despite projected flat spending (IR PUB/Centra I-59(a)). Not only is this volatile performance inexplicable and contrary to Board Order, but it also creates an obstacle for the contractor infrastructure which cannot plan for any particular level of activity.

At its actual pace in the year ending September 2012, it would take the Company 27.8 years to reach the Board's goal for the program.

The one thing that has risen substantially is the Company's administrative expense, now at 32% (calculated from IR PUB/Centra I-59(g)). Thus the Company appears to be reaping profits at the expense of its lower income customers. The Company's level of administrative expense is higher than at most successful programs; for an unsuccessful program, it is difficult to justify.

I recommend the Board investigate whether this spending is at a reasonable level.

As critical is program design. “[T]he customer contribution under the Furnace Replacement Program is $19 per month over 5 years for a total of $1,140, which is approximately the same dollar value of bill savings a customer could achieve annually by upgrading to a high efficiency furnace.” (IR CAC/Centra I-20(jj).) Thus the message to a lower income customer thinking about participating in the Company’s furnace program is that she will have to wait <u>five years</u> to receive any benefit from participation.

The manner in which the Company chose to respond to the Board’s direction with respect to marketing and demographic targeting is also illustrative of the Company’s lack of aggressiveness. The Board’s clear direction is for the Company to increase marketing to lower income neighbourhoods, which, among other things, requires gathering information to identify those neighbourhoods. The Company’s response includes that

> The study was never intended to provide data at a neighbourhood level that would provide statistically valid results to enable targeted marketing to lower income neighbourhoods. It was intended to provide global characteristics of the lower income market. (IR CAC/Centra II-61)

is despite the Board’s direction, and that it relied instead on Census data for the City of Winnipeg (*id.*). The Company does not provide either the Census data or how they were used to inform the marketing program, so its assertions in this regard are not reviewable.

In any case, two conclusions are inescapable from a review of the Company’s marketing:

(1) Marketing efforts are heavily reliant on media and could make better use of community groups, which are trusted in their communities and have a better sense of how to reach people in their own communities.

(2) At 3.2% penetration, the program has not been successful.

It is not possible to determine success of the Company’s lower income home insulation efforts because the Company has not accurately specified the scope of the problem it is addressing. It is not possible to determine the adequacy of the lower income insulation program targets and achievement because the Company’s survey of existing insulation is not reliable. While it appears from Company reports that it has achieved insulation of about a fifth of lower income homes (excluding apartments) the insulation of which is “fair” or “poor,” including a current pace of about 9% a year, this calculation of percentage achievement depends on the denominator of the fraction, that is, the number of homes considered to have “fair” or “poor” insulation, which the Company survey finds to be about a quarter of LICO-125 homes (2009 Residential Energy Use Survey Report, Low Income Cut-Off Sector, at iv). The Company determines this value by a survey that simply asks homeowners, who are certainly not experts on the matter, for the quality of their insulation. The Company’s only justification for this method is that it is better than asking for R-values since customers usually do not know those (IR CAC/Centra II-62). While this is no doubt true, it does not follow that customers would be much better at assessing their insulation on a less quantitative basis. A physical survey of a sampling of insulation conditions is the only reliable method. In its absence, the Company has failed to determine the scale of the home insulation gap among its lower income customers.

C. The Company should be ordered to comply with all previous Board orders by funding the formation of a separate, community-based energy efficiency agency to implement the lower income programs. In addition, the co-payment should be reduced to encourage participation.

After at least five years, it is time for the Board to hold the Company accountable for results rather than accept inadequate efforts. As noted, Company expenditures are at less than half the rate ordered by the Board, and 32% of those expenditures go toward administration, not toward furnace replacement. At this point, it does not matter whether the Company is unable or unwilling to comply with the Board’s orders. What is now clear is that the Board’s order of a $3.8 million annual expenditure to replace lower income standard efficiency furnaces is unlikely to occur under the Company’s stewardship.

Accordingly, my recommendation is that the Board require the Company to contract with a separate, community-based energy efficiency agency to market and implement the lower income programs. This agency should be given control over all existing lower income efficiency programs and funds as well as the annual Company contributions to them, with instructions to use that funding to market and implement the lower income programs as previously ordered by the Board. The Board should oversee the contracting process as well as the agency’s implementation and thus continue to oversee progress toward the goal of upgrading substantially all lower-income standard furnaces. As the Board has ordered (“The FRP is to continue at this level of funding beyond the test years, and until such time as Centra receives alternative direction from the Board.” Order 128/09 at 38), there should no end-date to the requirement for Company contributions to the fund until that goal, or additional goals the Board may set, is reached.

The Board further stated:

> Centra's goal shall be replacing all standard efficiency furnaces in qualifying lower-income homes. …
> Centra's pace in replacing conventional furnaces with high-efficiency furnaces for qualifying low-income homes is insufficient, an increased pace should aim at upgrading all the eligible furnaces within ten years. (Order 128/09, Sept. 16, 2009, at 39.)

If the performance of the furnace program were thus more than doubled, the remaining estimated number of lower income standard efficiency furnaces could be replaced in slightly more than 10 years from now (10.3 years), as compared with the Company's current path of 27.8 years from now. However, at that rate the Company would be standing still since the Board has already ordered these replacements to occur within ten years … four years ago. The problem is program implementation, not funding.

To reach the Board's goal of replacing all lower income standard efficiency furnaces by mid-September of 2019 (Order 128/09 at 39) would require an annual expenditure of about $6.5 million. Centra's chronic under-spending has allowed the fund balance to balloon to $14.9 million at December 31, 2012 (IR PUB/Centra I-59(b)); as a consequence, compliance with the Board's order to collect funds for the program at the annual rate of $3.8 million, together with the existing fund balance, covers about 96% of the funding needed to achieve this goal at current unit costs, including Company administrative costs if at the current rate of expenditure, leaving an annual shortfall of only about $250,000 over the next six years. I recommend that the Board increase the annual funding of the Furnace Replacement Program by $250,000, to $4.05 million, in order to achieve the Board's original ten-year replacement goal.

As noted, performance of the insulation program is more difficult to assess because of the Company's failure to collect reliable baseline information. My recommendation is for the Board to order the Company to hire an independent engineering contractor to conduct a physical survey of the present condition of lower income household insulation, under the supervision of the community-based energy efficiency agency. Once a baseline is thus established, the Board should order the Company to fund a program to insulate all inadequately insulated lower income homes over the next ten years. The program should be implemented by the same community-based energy efficiency agency as implements the furnace program.

Community-based energy efficiency agency

One model of a community-based energy efficiency agency is the Low-Income Energy Affordability Network (LEAN) in Massachusetts, to which this witness has been counsel since its formation in 1997.

LEAN was established by the principal agencies of the community-based network of Community Action Programs to coordinate state-mandated and federally-mandated low-income efficiency programs across the Commonwealth of Massachusetts. LEAN has evolved to coordinate among program delivery agencies and their auditors and contractors, utilities and their contractors, and state and federal agencies (including their contractors), to implement the panoply of low-income weatherization and fuel assistance programs in the Commonwealth… LEAN thus plays central roles in program design, monitoring and evaluation, training, and Best Practices coordination.

LEAN administrative services, funded by an assessment on efficiency budgets,[1] include:

- Assistance in the development of the comprehensive low-income residential demand-side management and education programs, as required by statute.
- Assistance in monitoring and evaluating existing programs to improve cost-effectiveness and develop new program features. This includes development of evaluation strategies, coordination with evaluators, synthesizing statewide lessons from program evaluations, and coordinating a Best Practices effort.
- Support for the training of low-income weatherization and fuel assistance program network auditors, contractors, and administrators to achieve quality, cost-effectiveness, and consistency.
- Coordination among utilities and their contractors, delivery agencies and their auditors and contractors, state and federal regulatory and funding agencies (including advisory bodies and contractors).

Deep, comprehensive, cost-effective investments are made in low-income homes, with a focus on upgrading inefficient heating systems and other large appliances as well as air sealing, lighting, health and safety. This "whole house" approach results in savings to low-income families of typically 20%+ of heating bills (from air sealing), 20%+ of heating bills (from heating system replacements, a majority of which are gas-fired), and 10% of electricity bills.

[1] Centra's administrative costs (i.e., internal costs – all costs other than to contractors) in the last year reported (2011/12) was 32%. This includes some necessary costs not included in LEAN administration, such as marketing. (IR PUB/Centra 1-59(g).) Marketing is separately funded as part of the cost of implementation.

Redundant quality control assures these savings.

Innovative and renewable energy measures in low-income settings include high efficiency domestic hot water and clothes washers, micro-combined-heat-and-power, high-efficiency wall insulation, and electric efficiency measures. All of these energy efficiency and renewable energy measures are delivered to low-income households at no cost to the householders other than the standard system benefits charges on all electric and natural gas bills.

Regulatory oversight, including of federal programs, is primarily at the state level and includes audits of all paperwork, inspection and quality control, process and impact evaluation, and oversight of program development, innovation, comprehensiveness, and cost-effectiveness.

Stakeholder communication and consultation is a key part of the low-income efficiency programs to promote efficient operation. In addition to daily management and regulatory communications, this is accomplished largely through a Best Practices task force ("Best Practices") that brings together the implementing agencies, utilities, and all other interested stakeholders. Interested stakeholders usually include representatives of low-income customers, state funders, and regulators; all others are welcome. Any topic can be raised at Best Practices, which usually focuses on training and recruitment of contractors and auditors, program delivery questions, and assessment of possible new measures and installation protocols. Where appropriate, statewide decisions are made.

Additional coordination of the agencies is conducted by periodic meetings of the lead agencies (LEAN), to which other stakeholders are also invited; as well as monthly meetings of all agency energy directors (Massachusetts Energy Directors Association, MEDA). Together, LEAN and MEDA oversee all low-income energy programs.

<u>Co-payment</u>

Finally, the Board should recognize that the program's co-payment is an obvious barrier to participation. As described above, the co-payment is structured so that a participating customer will break even for five years, before reaping the benefit of the new furnace (if the participant has not moved away before then) (IR CAC/Centra I-20(jj)).

Despite the Company's lackluster performance in promoting the furnace replacement program, and the apparent continued lack of lower income customer enthusiasm for the program as structured, the Company has apparently had very little curiosity about the impact of the program's co-payment. In response to a discovery question, the Company could only say: "It is not possible to estimate the number of customers who declined to participate based upon the customer co-payment for each of the measures as the reasons for not participating are not tracked and no studies have been undertaken." (IR CAC/Centra I-20(jj).)

Notably, Efficiency Nova Scotia provides such efficiency services at no cost to lower income households:

> major upgrades through the program. These upgrades include energy assessment, building envelope (weather-stripping air sealing, insulation), retiring or upgrading refrigerators and freezers, lighting and space/domestic hot water heating. The average cost of the upgrades is $4,200 for electrically-heated homes and $7,200 for non-electrically heated homes. Upgrades are free of charge to the homeowner. (Annual Report 2011 at 33.)

It does not take a study to figure out that, for a lower income customer with, by definition, insufficient income to cover all current essential expenses, a benefit five years away may as well not exist and is unlikely to provide a very strong incentive to participation in an efficiency program. The co-payment of the Furnace Replacement Program should be reduced or eliminated in order to make it affordable for the lower income households who are its intended beneficiaries. Most lower income energy efficiency programs provide benefit at zero cost to participants (*see* Dunsky Report at 95, described and referred to in Evaluation section below). In order to assure that there are immediate benefits for participants, I recommend that the co-payment be cut by at least 50%.

III. Programs should include renters, as the Company promised.

A. Summary of Order

As stated in the Pre-Filed Evidence of J. Oppenheim in 2009/10& 2010/11 GRA at 3, we agree with the Board and the Company that the lower income efficiency programs should be extended to renters:

> the Board agrees with Centra that a program to assist lower income households living in rented quarters needs to be developed and implemented (a significant proportion of lower-income households live in rented quarters).
>
> The Board understands that in many rented premises inefficient furnaces and inadequate insulation are present, with the cost of excess energy consumption falling to the householders not the landlords.
>
> Centra must do better in identifying its target market and reaching those that could and should benefit from the LIEEP and FRP. …
>
> Centra's DSM incentives and expenditures for residential customers have, in prior years, been funded by rates charged to all residential customers, including lower-income residential customers. The Board has accepted that even though low-income residential customers have contributed to funding the DSM programs, these same customers have not been able to take advantage of the programs … (Order 128/09 at 32.)

Unfortunately, the Company continues to lack a program targeted to the benefit of tenants.

B. The Company has no plan to serve lower income renters, but does have a plan for tenants to finance landlords' building improvements.

Almost ten percent (9.7%) of Centra's LICO-125 customers live in rental housing, almost triple the 3.3% of non-LICO-125 customers (2009 Residential

Energy Use Survey Report, Low Income Cut-Off Sector, at 15, 19).[2] They contribute to efficiency programs via the gas rate they pay, but receive inadequate efficiency services, including no service under the furnace replacement program (IR CAC/Centra 11-66; *see* IR CAC/Centra 1-20e) despite the fact that nearly half (44%) have standard efficiency furnaces and pay for their own heat (*ibid.*; IR CAC/Centra 1-20c and d). In addition, 81% have fair or poor insulation (*ibid.*; excluding apartments, data for which the Company did not provide), for which the Company's program covers only 42% of the cost (IR CAC/Centra II-63(d)) as contrasted with 100% of the cost for lower income homeowners (IR CAC/Centra I-20(dd)).

Yet the Company's approach to serving tenants is haphazard and includes no marketing or implementation plan (IR CAC/Centra 1-20e), despite the Board's order to develop and implement a program for lower-income renters (Order 128/09 at 32).

Perhaps the most egregious illustration of the Company's indirection in this sector is its application of the Pay As You Save (PAYS) idea to its lower income customers living in rental housing. The general principle of PAYS has merit in many non-low-income settings, and indeed the Company's Board-approved lower income furnace program for homeowners also shares aspects of PAYS program design.[3] However, tenants are differently situated from homeowners since they do not own their own heating equipment even though they pay to operate it. When a lower income homeowner pays a portion of the cost of a heating system upgrade, the homeowner is also receiving something of value – after five years of payments, the homeowner owns a new heating system with a remaining life of 20 years (*see* IRs CAC/Centra 1-20(jj) and II-78), during which the homeowner may either benefit from reduced heating bills or benefit from the value of the efficient heating system in the sale of the home. Tenants enjoy no such benefits of ownership. Yet the only benefit offered them under the Company's PAYS program is "long-term financing for qualifying energy efficient upgrades where the estimated monthly bill savings generated by the upgrade are sufficient to offset the average monthly finance payments; thereby not increasing the average monthly utility bill.[4] Landlords and tenant together are eligible to complete upgrades to the property with the unique feature that the

[2] IR CAC/Centra 1-20(b) provides similar data: 8.9% of LICO-125 customers are renters, 3.4 times the 2.7% of non-LICO-125 customers.

[3] I do not endorse his aspect of the Furnace Replacement Program or any other application of PAYS ideas to low-income customers.

[4] The Company's responses are inconsistent on this point. For example, "Landlords can also replace their standard efficiency furnaces through Centra's Furnace Replacement program provided an arrangement can be made to ensure the lower income tenant is realizing a substantial portion of the benefit of reduced heating costs. For example, Manitoba Hydro has made arrangements with Kinew Housing Corporation utilizing both the PAYS financing and Furnace Replacement Program to replace a number of standard efficiency furnaces" (IR CAC/Centra 11-65), but it is not clear how this might work or whether it is a program of general applicability since "the number of lower income households living in rented quarters served by the Furnace Replacement Program is zero." (IR CAC/Centra 11-66).

tenant, who receives the benefit of the upgrade, can pay for the upgrade on their utility bill." (IR CAC/Centra I-20(e).) The Company goes on to explain,

> The Pay As You Save Program (PAYS) operates under the principle that improvements are financed by the party that benefits from the bill reductions arising from the energy savings associated with the improvement. The Program addresses the reluctance of landlords to undertake energy efficiency upgrades that provide no monetary benefit to the landlord (e.g. where bill savings accrue to the tenant). (IR CAC/Centra II-63(b).)

In fact, however, the Company mischaracterizes the benefits of its program. The benefit to the tenant is only in paying to improve the landlord's property with no reduction in heating costs. Any benefit to the next tenant is likely to be absorbed by an increase in rent, so the only true beneficiary of this program design is a landlord of lower income gas customers.

The Company's information responses are not clear in this respect, but it appears that the PAYS program is a new idea for Centra, with only nine landlord participants; it is not clear that any of them has lower income tenants (IR CAC/Centra 1-20(e) and II-63(f), 64). The promotion of PAYS to lower income tenants should be terminated.

The central point here is that lower income rental buildings are served by programs directed to other sectors. There is no program targeted to lower income multifamily buildings. ("Tenant household income for multi-unit residential buildings is not collected as this is not a condition of program eligibility." IR CAC/Centra II-63e.)

C. The Company should be ordered to establish a budget for lower income rental buildings, with program development undertaken by the community-based energy efficiency agency.

Lower income rental buildings are probably the most difficult lower income subsector for which to design an efficiency program. This is due in part to the widely acknowledged "split incentive" problem – landlords have little incentive to invest in energy efficiency measures when their tenants are paying the heating bill. Program designs are also stymied by the distaste of policymakers for providing what are perceived as free benefits to landlords. Finally, account must be taken of the fact that tenants are differently situated with respect to whether or not they pay heating bills directly or via their rent and also with respect to whether their heating bills are effectively capped by income assistance.

A serious program in this subsector needs to focus on the objective, which is to lower the heating bills of lower income tenants (Order 128/09 at 32). The best way to achieve this objective is a 100% grant with no co-payment, or a program that is at least as generous as the lower income homeowner Furnace Replacement Program. (Since customers receiving income assistance effectively already have capped utility bills, those customers should be excluded from this program.) An effective way to address the understandable distaste for making such gifts to lower income landlords is to require the Company to condition landlord benefits on an enforceable agreement either to hold rent unchanged for a specified period of time or to maintain all rental units in the building exclusively available for tenants who are certified to be lower income. In this way, the landlord provides something of value in exchange for the efficiency benefit while also preserving a benefit for tenants. (Master-metered buildings can be included under these terms since both landlords and their tenants would benefit from the reduced heating bills.) This is successfully done in Massachusetts and elsewhere in low income efficiency programs for small and large multi-tenant buildings. It should be noted that under this proposal the Board would regulate only the Company's contracting; any enforcement of the contracts should be undertaken by tenant-beneficiaries of the contracts.

The larger point is that serving the lower income tenant subsector requires particular targeted attention and cannot be done by offhandedly adapting programs targeted for other sectors that have very different incentives and characteristics.

IV. The Company should conduct evaluation, as promised, that is independent and rigourous.

A. Summary of Order

In the 2009/10& 2010/11 GRA, we recommended, and Centra agreed, to evaluate its lower income DSM programs: "Centra did support Mr. Oppenheim's proposal to develop an effective review of Centra's DSM programs, and Centra stated that it was in the process of finalizing an evaluation plan for the LIEEP including the FRP portion." (Order 128/09 at 32)

B. The Company has failed to plan or conduct appropriate evaluations.

Process evaluation

Despite the Company's claim in the 2009/10& 2010/11 GRA that it was "in the process of finalizing an evaluation plan, it was three-and-half-years after the Order in that case, and then only in response to a request by the PUB (PUB/MH I-155 in the 2010/11 & 2011/12 Manitoba Hydro Electric GRA (Appendix 25)), and by CAC (CAC IR CAC/Centra II-68), that Centra produced a copy of a four-year-old process evaluation completed by Dunsky Energy Consulting on the portfolio of DSM programs offered by MH ("Dunsky Report"). In that report, Dunsky stated: "This report examines the Power Smart portfolio of programs as it stood in December, 2008. We have not accounted for any changes – including improvements and additions – to the Power Smart portfolio that may have arisen since then." (Dunsky Report at 2)

There were some useful observations and recommendations in the Dunsky Report that might have enabled Centra to more effectively implement its lower income EE programs. Dunsky observed that "Manitoba Hydro compares well with case studies and has developed interesting innovations in delivery model and incentive levels….however, Manitoba Hydro is unusual in its requirement for customer copayments." (Dunsky Report at 95) Again, on page 102, Dunsky stated:

> Another design difference is MH's requirement for a customer co-pay on furnace replacement. A strong majority of low-income programs we have reviewed in previous research require no customer co-pay, or require co-pays from landlords only, and there is anecdotal evidence that co-pays reduce participation. On the other hand, MH's use of low-cost monthly payments paid via utility bills seems likely to minimize loss of participation, and early uptake results

> suggest that the measure is very popular. An additional design difference, as mentioned, is treatment of renters. …Although Manitoba Hydro compares well (offering most measures to renters and being more generous than PA), *it may want to extend a version of its furnace offer to rental households* [emphasis added].

Critically, the Report also noted: "Note that this is a new program and was rapidly evolving as of December 2008, making analysis difficult. Unlike other programs, our rating here is based in part on projected performance." (*Id.* at 95) Yet, since the Board's order to ramp up the program in 2009, and numerous program changes since, in the past four years there has been no process evaluation planned or conducted.

The Company's Quality Control protocols offer another example of the need for process evaluation. In response to a request by CAC asking Centra to describe its quality control protocols for the LIEEP and provide documentation of same, Centra responded with a description of the energy audit and measure installation process, as well as the "Authorization to Pay" forms submitted by the contractors.

> The Authorization to Pay forms contain energy efficiency upgrade information including the installation date and a signed confirmation from the customer and contractor declaring the work has been completed as originally agreed upon…. Post-retrofit inspections are completed in approximately 20% of participating homes to verify measurements and that work was completed to LIEEP standards. (IR CAC/Centra II-78(e).)

The response does not indicate who performs the inspections, nor does it provide any documentation, as requested.

In addition to commissioning a process evaluation to review program operations and Centra's application of the recommendations of the Dunsky Report, CAC recommends that Centra engage an independent entity to conduct a process evaluation of its LIEEP that would include at least the following elements:

- Identifying the goals for the inspection and verification of the LIEEP;

- Determining the specific parameters used in the savings verification process and whether these parameters are appropriate for the program;
- Identifying the target and actual confidence and precision levels for the inspection and verification activities;
- Reviewing the internal monitoring and evaluation participant selection process and the sampling techniques employed by program implementation staff;
- Reviewing site inspection documents and findings, and evaluating any savings adjustments that were made; and
- Providing recommendations for the design and operation of future verification activities.

Thus, for example, as part of the quality control process, the Company should perform post-implementation verification and inspections on a sample of participant residences; conduct telephone calls with program participants, implementers and any other contractors or entities involved in program delivery; evaluate the methodology and structure of the existing post-implementation verification process; review forms used in the program in order to gain insight into information gathered during verification, and to identify any opportunities for increasing the effectiveness and accuracy of the quality control procedures. (Adapted from ADM Associates; “2012 Arkansas Weatherization Program: Final Evaluation Report” at 5-5.)

<u>Impact evaluation</u>

Additionally, it was not until a request by CAC in this docket (IR CAC/Centra II-68) that Centra filed its impact evaluation plan (Evaluation Plan:_Lower Income Energy Efficiency Program (“LIEEP Evaluation Plan”)), also three-and-half-years after the Order in the case in which the Company claimed that it was “in the process of finalizing an evaluation plan.” To the knowledge of CAC, the LIEEP Evaluation Plan has not been reviewed or approved by the Board. Upon CAC’s review, the LIEEP Evaluation Plan is shown to be completely inadequate.

When asked to state the identity of the personnel conducting the savings evaluations, including their degree of independence from the Company, Centra replied: “All program evaluations are performed by staff in the Planning, Evaluation and Research Department reporting directly to the Vice-President, Customer Care & Energy Conservation. All staff are employees of Manitoba Hydro.” (IR CAC/Centra II-78-f) Thus, there has been no independent review or impact evaluation of Centra’s lower income DSM programs or any plan for an independent review.

Another major problem CAC identified in the LIEEP Evaluation Plan was its reliance on engineering estimates to calculate energy savings: "Energy savings for insulation, furnace, boiler or basic energy efficiency measures installed in the home are based upon engineering estimates." (IR CAC/Centra II-78(e).) Thus, the LIEEP Evaluation Plan does not require reviewed and approved baseline data; the engineering estimates themselves have not been tested and evaluated by an independent entity; and there has been no billing analysis or after-the-fact monitoring and evaluation of energy savings in a sample of participant dwellings, or any other independent assessment of the impacts of the Company's lower income DSM efforts. The point of an impact evaluation is to assess engineering estimates, not repeat them.

In calculating the net benefits of the LIEEP, Centra improperly used the Company's weighted average cost of capital ("WACC") as the discount rate. When asked in discovery for its rationale for using WACC, the Company was unable to come up with one. Its full "rationale" is:

> Centra uses its real weighted average cost of capital (WACC) as the discount rate when evaluating DSM program savings, costs and benefits. Centra's real WACC at the time the 2011 Power Smart Plan was undertaken was 6.1%. (IR CAC/Centra II-78(a).)

Centra should use the risk-free Canadian Treasury Note rate for average measure life, at least for lower income programs where the Board has ordered the Company to set aside the fund and thus guaranteed cost recovery:

> The Board … will direct that the approved rate adjustment that funded the FRP through to March 31, 2009 continue, and that the revenue raised remain devoted to the FRP." (Order 128/09 at 36)

> The Board will direct that Centra continue to fund, through SGS customer class rates, the FRP in the amount of $3.8 million per year. This amount is to be funded as an expense item, and not as a deduction from Centra's revenue requirement. The $3.8 million to be raised annually is to accrue to the FRP account, regardless of Centra's net income results (which can be significantly impacted by changes in the weather).

> The FRP is to continue at this level of funding beyond the test years, and until such time as

> Centra receives alternative direction from the Board. Any unspent funds at the end of a fiscal year are to accrue interest at Centra's actual short-term interest rate. (*Id* at 38.).

Thus, the cost of the LIEEP is a risk-free expense by the Company. In any case, the government risk-free rate should be used because the LIEEP fulfills social objectives enumerated by the Board:

> The benefits that arise out of the FRP effort are numerous, and represent the potential for a real economic stimulus at a time when the economy is in need of it; in fact, at a time when governments are attempting to stimulate the economy through infrastructure projects.
>
> In addition to the immediate benefits available to FRP participants, that being reduced energy bills, there are societal benefits, which include:
> • Reduced GHG emissions;
> • Increased jobs as community groups and MH require additional home energy auditors and furnace contractors require additional installers;
> • Training of the additional home energy auditors and furnace installers;
> • Improvement of the housing stock in Manitoba, increasing property values;
> • Improvement to the health and safety of FRP beneficiaries – replacement of old furnaces that could be leaking carbon monoxide, homeowners able to set their thermostats at a comfortable temperature; and
> • Take maximum advantage of available federal ecoEnergy funds and the pending federal 15% Home Renovation Tax Credit program.
>
> * * *
>
> With the Board's direction and support, Centra can take action on future lower-income programs absent demonstrating successful TRC and RIM scores for those programs. (Order 128/09 at 39-40.)

C. The Board should order Centra to fund and contract for adequate and independent process and impact evaluations forthwith.

In response to a request by CAC (IR CAC/Centra I-20(i)), the Company stated: "As all evaluations are presently performed in-house, Centra does not specifically allocate dollars to the cost of evaluations." Since the Company has budgeted only $22,000 for both planning and evaluation of the LIEEP in 2011/2012 (*id.*), instead of the norm of around 3% of the program budget,[5] it is not surprising that an independent contractor has not been engaged for evaluation purposes. But the Company has shown no indication that it has even considered the need to do so, despite its own consultant's recommendation that it do so (P. Dunksy *et al.*, "Leadership in Energy Efficiency: Comparing Manitoba Hydro's Power Smart with Leading North American Strategies" at 15 (Manitoba Hydro, 2009), http://www.hydro.mb.ca/regulatory_affairs/electric/gra_2010_2012/Appendix_25.pdf).

There are several reference guides to energy efficiency program impact and process evaluations going back as far as 1995 when the US Department of Energy's National Renewable Energy Laboratory (NREL) published "A Manual for the Economic Evaluation of Energy Efficiency and Renewable Energy Technologies." These include: the Impact Evaluation Framework for Technology Deployment Programs: An approach for quantifying retrospective energy savings, clean energy advances, and market effects (2007) (Main Report), prepared by John H. Reed (Innovologie LLC), Gretchen Jordan (Sandia National Laboratories) and Edward Vine (Lawrence Berkeley National Laboratory), http://www1.eere.energy.gov/analysis/pdfs/impact_framework_tech_deploy_2007_overview.pdf; Review of Evaluation, Measurement and Verification Approaches Used to Estimate the Load Impacts and Effectiveness of Energy Efficiency Programs, prepared for Lawrence Berkeley National Laboratory, by

[5] Mean of rate-payer funded program evaluation, measurement and verification (EM&V) spending is 2.8% of program budget with a high of 5%. ("Evaluation, Measurement, and Verification Working Group Blueprint," US DOE/US EPA, State Energy Efficiency Action Network, May 2011), http://www1.eere.energy.gov/seeaction/pdfs/seeaction_emv_blueprint_052311.pdf. Efficiency Nova Scotia, regulated by the Nova Scotia Utility and Review Board, allocates 6% to evaluation. (Annual Report 2011 at 47, http://www.efficiencyns.ca/wp-content/uploads/2013/03/2011-Annual-Report.pdf). The evaluations are independent. *E.g.*, Efficiency Nova Scotia, "DSM Plan 2012" at 2, 7, 35 *et seq.*, *see* 15-16. "Efficiency Nova Scotia's energy savings figures undergo a rigorous, multi-stage review every year. First off, our staff calculates electricity savings for each project. Then, an independent evaluator examines those savings figures and makes adjustments and recommendations in a detailed report (usually about 1,000 pages long). After that, the Utility and Review Board's own independent expert examines the findings and submits a final verification report. And finally, those reports are all submitted to the Utility and Review Board for its own review and distributed to stakeholders and the public." http://www.efficiencyns.ca/who-we-are/frequently-asked-questions/.

Independence of evaluation is the practice across Canada, including at BC Hydro, Ontario Power Authority ("EM&V Protocols and Requirements (2011-2014)", http://www.powerauthority.on.ca/sites/default/files/20110331%20-%20EMV%20Protocols%20and%20Requirements.pdf *see* http://www.powerauthority.on.ca/benefits/evaluation-measurement-and-verification), and Union Gas Ltd, (2011 DSM Plan at 10-11, *see* 40-41, 78, http://www.uniongas.com/aboutus/regulatory/EB-2010-0055-2011DSMPlan/UNION_APPL_2011%20DSM%20Plan_20100430.pdf).

Mike Messenger, Ranjit Bharvirkar, Bill Golemboski, Charles A. Goldman and Steven R. Schiller (April 2010), http://eetd.lbl.gov/ea/emp/reports/lbnl-3277e.pdf; and the Energy Efficiency Program Impact Evaluation Guide (U.S. Department of Energy, December 2012), http://www1.eere.energy.gov/seeaction/pdfs/emv_ee_program_impact_guide.pdf.

To correct the deficiencies noted above, CAC recommends that the Board order the Company to contract for independent process and impact evaluations forthwith, and allow for review and public comment on and Board approval of the impact and process evaluation plans. Once approved, CAC recommends that the Board order Centra to engage independent contractors to perform such evaluations of the LIEEP in 2013, and to file reports on these evaluations in the first half of 2014, so that appropriate modifications, if any, which arise from the evaluations can be implemented as soon as practicable, at the Board's directive. In order to assure the evaluators' independence, there should be joint oversight by Centra, the Board, and stakeholders including CAC. CAC recommends that between 3% and 5% of program budgets be allotted for this purpose.

V. Bill assistance to lower income households should be increased, as encouraged by the Board

A. Summary of Order

The Board's most recent GRA finding is worth quoting at length both because of its comprehensive approach to the issue of assistance for lower income households in paying their bills, but also for the Company's almost complete disregard of it:

> **Board Finding - Bill Assistance Program**
>
> While the Board appreciates Centra's (and MH's) existing bill assistance programs, and realizes that they go further than the vast majority of other Canadian utilities, is still not assured they go far enough in assisting lower-income consumers.
>
> Manitoba is a cold place in winter, the average income is below the Canadian average, and there still is a high percentage of households that can be fairly considered lower-income. This situation requires special attention, and while the Board agrees that bill assistance may take many forms, and accepts that Centra has implemented several tools to help its customers meet their energy bills, more needs to be done.
>
> Centra cited the Neighbours Helping Neighbours program, where Centra matches private donations, and indicated that all customers eligible for assistance and applying for it are and will not be denied assistance. However, Centra also reported that only between 274 and 470 customers have annually been helped by Neighbours Helping Neighbours (in each of the last three years).
>
> While the assistance now provided is helpful to those receiving it, the Board notes that assisting 274 to 470 customers annually pales in significance when compared to the number of accounts in arrears, that being approximately 20,000 – almost 10% of Centra's customer base. The Board also notes that before the

implementation of the load limiter program service disconnections ranged to as high as 9,000 in a single year.

In short, there are many more customers that could make use of the Neighbours Helping Neighbours program. The program needs more promotion, and, perhaps, the eligibility criteria is too restrictive. As well, the provision of one-time assistance is of little lasting value for certain households, where the economic problems are continuing in nature.

It is unclear from MH's Bill Assistance Report whether Centra or MH refer customers with delinquent accounts to the Neighbours Helping Neighbours program as a matter of course, or whether such referrals occur at all. MH explained that messages related to delinquency are printed on the customer's bill when their account is past due, but that there is no mention of the Neighbours Helping Neighbours program.

Bill assistance programs should not be viewed as benefiting only a limited number of lower income households. The Board has heard through several past proceedings and at this most recent hearing of societal benefits that accrue when lower-income households are able to pay their energy bills, maintain a healthy temperature in their homes, and are able to avoid disconnections and the installation of load limiters.

Centra incurs considerable costs whenever it disconnects or reconnects a gas or electric service to a home. Installing load-limiting devices, which ensure that homes retain the benefit of heat in cold Manitoba winters, also involve significant Centra expenditures. When Centra incurs costs, be they collection, bad debt or other costs related to delinquency, these costs are ultimately borne by all ratepayers, and reflected in rates.

> Centra incurs bad debt expenses of over $2 million each year, and expends considerable time and effort in its collection activities (spending over $5 million annually administering the collection of past due natural gas accounts, costs which are paid by ratepayers). Centra must print disconnection notices and notification letters, contact customers by phone to make payment arrangements, and disconnect and reconnect services. A bill assistance program will reduce the need for these activities, leading to lower costs.
>
> As well, there are societal benefits with bill assistance programs that that do not directly affect Centra's financial bottom line. Bill assistance programs allow lower-income households to maintain a warmer temperature in the home, which can help minimize health problems (and medical and hospital costs) and reduce lost work days due to sickness. (Order 128/09 at 45-47.)

B. The Company has failed to comply with the Board's direction.

As noted, above, the Board found that "the provision of one-time assistance is of little lasting value for certain households, where the economic problems are continuing in nature." Yet the Company maintains its rule that "Applicants are eligible for assistance once per year" (IR CAC/Centra I-20(ff)) and disregards the Board's concern with a one-sentence statement that, against all evidence marshaled by the Board, "The belief is that by working to connect customers with available support services, they will be in a better position to manage possible future events." (*Id.*).

Similarly, "the Board notes that assisting 274 to 470 customers annually pales in significance when compared to the number of accounts in arrears, that being approximately 20,000," yet the Company edged up the number of grants only to 604 to 946 over the last three full years reported, an average of 754 customers, while the number of Company accounts in arrears have jumped about 25% to an average of 25,055 for the last 12 months reported.

To the Board's suggestion that "perhaps, the eligibility criteria is too restrictive," the Company's one-line response is to repeat its one grant restriction, "Applicants are eligible for assistance once per year" (IR CAC/Centra I-20(ff)(a)(iii)).

What the Company chooses to ignore is that – since lower income household gas usage is within two percent of that of all customers' (IR CAC/Centra 1-20(kk) and (mm)) yet income is less than half (IR CAC/Centra 1-20(mm) and Statistics Canada, http://www.statcan.gc.ca/pub/75f0002m/75f0002m2011002-eng.pdf) – the fraction of income devoted to gas bills by LICO-125 customers (often called the energy burden) is more than double (2.6 times)that of other customers, 8.4% vs. 3.2% of income to pay the gas bill in 2009 (2009 Residential Energy Use Survey Report, Low Income Cut-Off Sector, at 39).[6]

C. Bill Assistance to lower income customers should be increased. Consideration should be given to a discounted rate for lower income customers.

Research that I and others have conducted for decades shows that three-fifths of US states provide lower rates for lower income households in order to increase the likelihood that they will be able to pay their energy bills. The reasoning is exactly that enunciated above by the Board: They lower the risks of bad debt and arrears, as well as the costs of disconnection, reconnection, and collection.

Indeed, this is the rationale adopted by Manitoba Hydro itself in support of its lower income DSM programs:

> The objective of Manitoba Hydro's Affordable Energy Program was not to address or solve the energy burden within Manitoba. The objective of the Affordable Energy Program was to develop a program to assist customers with managing their energy bills. As a result of energy efficiency improvement, energy affordability within the Province is improved for participating customers. This program was developed within and is consistent with the legislated mandate for the Corporation. (Rebuttal Evidence of Manitoba Hydro in the Matter of Manitoba Hydro filing in respect to Increase Electric Rates for 2010/11 2011/12, Dec. 31, 2010, at 89.)

The Board applies this additional reasoning, also broadly accepted in US states:

- They apply broadly to the lower income population;
- They address economic problems that are continuous; and

[6] While gas prices are lower now, these relationships are the same.

- They reduce medical costs and lost work days.

No two states have implemented utility bill discounts in exactly the same way. Each state or utility has assessed the needs and circumstances of its customers, the number of affected customers, and the effect on other customers in designing the chosen program. Further, government programs for lower income renters and utility customers differ not only among the various US states but also between Canada and the US, and across Canadian provinces. While there are many variations in the details, there are three basic types of discount programs in the US:

- Fixed percent of bill;
- Fixed dollar discounts; and
- Discounts that vary with usage

The fixed percent of bill design includes discounts ranging from seven to 40 percent, depending on the state and utility company. Other states provide a fixed dollar discount, most typically by waiving the customer charge for low-income customers. Others provide a fixed credit amount that has been determined in a rate case to be sufficient to the state's purposes.

A percentage discount may also vary with a customer's usage, as in the original California Lifeline rate. This could take the form of a discount that applies only to a lifeline block -- *i.e.*, the minimum amount of energy deemed to be necessary to sustain life in today's society. Usage beyond this amount is priced at the regular residential rate. Alternatively, the discount could decline, but still exist, as usage increases. Another rate that results in a discount that varies with usage is the inverted block rate, adopted in California and other states at various times. In an inverted block rate, blocks of energy consumption are established such that greater levels of consumption are charged higher unit costs.

A type of payment program that is increasing in use is the percentage of income payment plan (PIPP). This type of program takes the energy burden of low-income customers strictly into account and structures a payment program such that the burden faced by these customers will be no higher than a predetermined percentage of their income. The percentage chosen varies by state and may bear a direct relationship to the burden borne by customers of average income in the state.

The most obvious virtue of the fixed percentage and fixed dollar discounts is that they are simple for the utility to administer and for customers to understand. On the other hand, a discount that varies with usage is preferred by some because it encourages conservation – or at least does not encourage consumption. (A fixed dollar discount shares this effect to some extent since the percentage discount declines as consumption increases.) However, these effects are probably very small, if not zero, because the elasticity of low-income demand is very small; *i.e.*, low-income consumers have so little income relative to their needs that decreasing the price of one necessity tends to result in larger consumption of another scarce necessity rather than an increase in discretionary consumption.

Bill assistance proposals have been challenged and debated in Manitoba yet the Company has disregarded the Board's clear concern for the issue. Perhaps there is a gap in government programs that causes an arrears problem for Centra that it would be beneficial to Centra and its ratepayers to address with ratepayer funds. It would take a discount of about 60% to bring the median LICO-125 energy burden to the level of other customers. However, my experience is that a much lower percentage discount can provide a high but more bearable energy burden for LICO-125 customers without creating an undue burden on other ratepayers. In any case, since customers receiving income assistance effectively already have capped utility bills, it would not be appropriate for the utility to reduce the bills of those customers. Alternatively, there are other proven approaches to bill assistance, such as targeting lower income customers with demonstrated difficulty in managing their energy bills, *i.e.*, those with accounts in arrears, in order to target the costs of bad debt, arrears, and disconnections.

Energy bill assistance has been a complicated, difficult, and contentious issue in Manitoba as well as elsewhere, with no single right answer. It is worthy of further discussion and study to explore whether a specific program can be developed that is appropriate for Manitoba.

VI. Summary of Recommendations

In summary, my recommendations are as follows:

1. In view of the Company's five-year failure to successfully operate the Furnace Replacement Program, the Board should oversee the Company's contractual agreement with a separate, community-based energy efficiency agency to implement the lower income programs. This agency should be given control over all existing Centra lower income efficiency programs, marketing, and funds as well as the annual Company contributions to them, with instructions to implement the lower income programs as previously ordered by the Board.

2. The Board should increase the annual funding of the Furnace Replacement Program by $250,000, to $4.05 million, for the next six years, in order to achieve the Board's original full replacement goal by September 2019.

3. The Furnace Replacement Program co-payment should be cut by at least 50%.

4. The Board should investigate the Company's level of administrative expense in the Furnace Replacement Program.

5. The Board should order the Company to hire an independent engineering contractor to conduct a physical survey of the present condition of lower income household insulation, under the supervision of the community-based energy efficiency agency. Once a baseline is thus established, the Board should order the Company to fund a program to insulate all inadequately insulated lower income homes over the next ten years. The program should be implemented by the same community-based energy efficiency agency as implements the furnace program.

6. The Company should be ordered to establish a budget for lower income rental buildings, with program development undertaken by the community-based energy efficiency agency.

7. The promotion of PAYS to lower income tenants should be terminated.

8. The Board should order the Company to contract for independent process and impact evaluations forthwith, and allow for review and public comment on and Board approval of the impact and process evaluation plans. Between 3% and 5% of program budgets should be allotted for this purpose. Programs should be adjusted to assure all

needed evaluation data are collected. After the evaluations are completed, programs should be adjusted to take evaluation findings into account.

9. A process evaluation should be undertaken to evaluate the effectiveness of program design in achieving program goals. In doing so, the process evaluation should review at least program operations, Centra's application of the recommendations of the Dunsky Report, quality controls, and methods of savings verification.

10. The impact evaluation should use established methods to assess engineering estimates and should use a risk-free discount rate.

11. The implications of bill assistance to lower income customers should be further investigated.

VII. Appendix – Resume, publications, and testimony of Jerrold Oppenheim

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Harvard College, B.A. in Government
Boston College, J.D..
Dean's List; American Jurisprudence Book Award, Evidence

1999- LAW OFFICE OF JERROLD OPPENHEIM
Independent counsel and consultant. Current and past clients include AARP (formerly the American Association of Retired Persons), DNL Risk Management Associates, Edison Electric Institute, Entergy Corp., Hauppauge Industrial Association, Kentucky Attorney General, Leveraging Assets for Self-Sufficiency through Energy Resources (counsel), Low-Income Energy Affordability Network (counsel), National Association of Regulatory Utility Commissioners, National Council on Competition and the Electric Industry, Public Utility Law Project, Texas Legal Services Center, United Nations International Labour Organization, U.S. Department of Energy Oak Ridge National Laboratory, Utah Committee on Consumer Services, Utility Workers Union of America.

1996-1999 NATIONAL CONSUMER LAW CENTER
Attorney, analyst, expert witness

1994-1996 PACE UNIVERSITY LAW SCHOOL, White Plains, New York
Founding Director, Renewable Energy Technology Analysis
Center for Environmental Legal Studies

1986-1994 MASSACHUSETTS DEPARTMENT OF THE ATTORNEY GENERAL,
Assistant Attorney General, Regulated Industries Division

1984-1985 GREATER BOSTON LEGAL SERVICES
Managing Attorney

1981-1984 NEW YORK STATE DEPARTMENT OF LAW
Assistant Attorney General. Energy and Utilities
Assistant Attorney General In Charge, 1982-1984

1978-1981 COMMUNITY ACTION FOR LEGAL SERVICES, New York
Director of Consumer Law

1973-1978 LEGAL ASSISTANCE FOUNDATION OF CHICAGO

Director of Business Regulation Litigation

1970-1973 Chicago: AMERICAN CIVIL LIBERTIES UNION
LAWYERS' COMMITTEE FOR CIVIL RIGHTS UNDER LAW

1969-1970 Washington: CENTER FOR STUDY OF RESPONSIVE LAW
THE CHILDREN'S FOUNDATION
PUBLIC INTEREST CENTER
BOSTON COLLEGE LAW SCHOOL PUBLICATIONS TRUST

Selected Other Professional Activities

2009-	Center for Public Utilities Advisory Council, New Mexico State University
2001	Board of Directors, Affordable Energy Solutions, Inc., New York
1999-2002	Energy Program Advisory Group, Massachusetts Department of Housing & Community Development
1998-2002--	Board of Directors, National Low Income Energy Consortium
1993	Renewable Energy Subcommittee, National Association of State Utility Consumer Advocates
1992	Telecommunications Committee, National Association of State Utility Consumer Advocates
1992-1994	Advisory (Finance) Committee, Town of Brookline, Mass.
1992-1995	Town Meeting Member (elected), Town of Brookline
1990-1995	Advisory Group, The New England Project, M.I.T. Energy Lab.
1988-1996	Cable Television Monitoring Committee, Town of Brookline
1988-1989	Electric Committee, National Association of State Utility Consumer Advocates
1981-1984	Commissioner, New York State Legislative Commission on Science and Technology
1980-1985	Communications Media Committee, American Civil Liberties Union
1980-1981	Advisory Committee, N. Y. State Consumer Protection Board
1979	Primary reviewer, utilities section, Poverty Law Reporter
1979-1981	Board of Directors, Public Utility Law Project
1978	Advisory Council, Illinois Office of Consumer Services
1977-1980	Editorial Board, Evaluation Quarterly
1976-1977	Electric Utilities Study Panel, Illinois Energy Resources Commission
1976-1977	Advisory Council, Aspen Institute Program on Communications and Society
1972-1975	Public Media Advisory Panel, Illinois Arts Council
1971-1978	Cable Television Committee, Legal Committee, Privacy Committee, American Civil Liberties Union, Illinois Division
1971-1975	Editor, Editorial Board, Chicago Journalism Review

MAJOR PUBLICATIONS OF JERROLD OPPENHEIM

Books and Book Chapters

Policy Without Principle: A Study of the Federal Communications Commission, with Albert H. Kramer, book-length report to supporting foundations (Washington: Boston College Law School Publications Trust, 1973).

Sowing the Wind, by Harrison Wellford, special research assistant (New York: Grossman Publishers, 1972).

Readings in Cable Television, editor (Chicago: Columbia College, 1972).

"Cable TV: Servant and Spy," in R. J. Glessing and W. E. White, eds., Mass Media: The Invisible Environment (Chicago: Science Research Associates, 1973). Originally published in The Progressive (July 1972) and reprinted in Current (October 1972).

"Cable TV and Privacy," in G. S. McClellan, ed., The Right to Privacy (New York: H. W. Wilson Co., 1976). Originally published as "I Wonder Who's Watching Me Now" in Cable Report (January 1975).

"The Unfulfilled Promise of Cable TV," in T. C. Smythe and G. A. Mastroianni, eds., Issues in Broadcasting (Palo Alto: Mayfield Publishing Co., 1975). Originally published in The Progressive (March 1974).

"Racial Discrimination in Chicago's Storefront Banks," with W. P. Bridges, in Thomas D. Cook, ed., 3 Evaluation Studies Review Annual 735 (Beverly Hills: Sage Publications, 1978). Originally published in 1 Evaluation Quarterly 159 (February 1977).

"Potential Costs of Competition: A Customer Perspective -- Brownouts, Death Spirals and Alternatives," in S. Limaye, ed., Utility Opportunities for New Generation (Washington and Palo Alto: Edison Electric Institute and Electric Power Research Institute, 1989).

"Innovation and New Services -- A Response" in B. Cole, ed., After the Breakup: Assessing the New Post-AT&T Divestiture Era (New York: Columbia University Press, 1990). Originally published as "Innovation in Telecommunications: Is the Innovation Brought by Divestiture Worth the Price of Competition?" for Columbia Center for Telecommunications and Information Studies (1989).

"Why Should We Collaborate?" with Ronald L. Lehr, et al., in Photovoltaics for Utilities State Working Handbook (Stuart, Fla.: Edison Electric Institute, et al., 1992).

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(*): with Theo MacGregor

Jurisdiction	Docket	Subject matter
Baltimore City Circuit Court	95 311038/CL204287	Cable TV late charges
Connecticut General Assembly	S.B. 733	Electricity resourceprocurement
Connecticut General Assembly	H.B.5005	Electric restructuring
Cook County, Illinois Circuit Ct.	95CH11993	Cable TV late charges
District of Columbia Public Service Commission	F.C. 945	Low-income energy efficiency (*)
District of Columbia Public Service Commission	F.C. 945	Low-income energy efficiency (*)
Kane County, Illinois Circuit Ct.	LKA97 0285	Cable TV late charges (report and deposition)
Manitoba	2009/2010 & 2010/2011 General Rate Application	Centra Gas Manitoba Inc. DSM
Massachusetts General Court	various, incl. St.	Electric restructuring, Gas restructuring,
	1997, c. 164	Low-income energy issues
Public Utility Comm. of Ohio	98-1245-TP-ACE, et al.	Pre-paid telephone services
Texas Legislature	S.B.7	Low-income issues in electric restructuring
Texas Public Utilities Commission	28840	Low-income energy efficiency (*)
Texas Public Utilities Commission	24840	Providers of Last Resort - Entergy, TXU E&W DFW (*)
Texas Public Utilities Commission	24190	Providers of Last Resort - Entergy, TXU E&W DFW (*)
Texas Public Utilities Commission	22349	Low-income System Benefit Fund - TNMP
Texas Public Utilities Commission	22350	Low-income System Benefit Fund - TXU
Texas Public Utilities Commission	22351	Low-income System Benefit Fund - SPS
Texas Public Utilities Commission	22352	Low-income System Benefit Fund - CPL
Texas Public Utilities Commission	22353	Low-income System Benefit Fund - SWEPCO
Texas Public Utilities Commission	22354	Low-income System Benefit Fund - WTU
Texas Public Utilities Commission	22355	Low-income System Benefit Fund - Reliant
Texas Public Utilities Commission	22344	Generic rate design issues
Texas Public Utilities Commission	16705	Rate Design and Cost Allocation - Entergy
Texas Public Utilities Commission		Competitive Issues
U.S. Dist. Ct., N.Dist. Mississippi	A:98CV51-D-D	Cable TV late charges
U.S. Dist. Ct., South Carolina	3 98-11119-10	Cable TV late charges (report and deposition)
Utah Public Service Commission	97-035-01/99-035-10	Low-income assistance (report)