

**LETTING EVERYONE HELP:  
REMOVING BARRIERS TO CONSUMER  
PARTICIPATION IN ENERGY  
CONSERVATION**

Written by: Michael Janigan

Researcher: Elizabeth Kim

Public Interest Advocacy Centre  
1204 – ONE Nicholas St.  
Ottawa, ON  
K1N 7B7

February  
2006

*With Funding from Industry Canada*

## **Executive Summary**

The necessity to reduce overall consumption of energy is a goal common to Canadian governments at all levels. This goal is driven, in part, by the duty to reduce emissions pursuant to Canada's international agreements and the stark economic reality of the costs associated with construction of new power generation to meet increasing demand.

With rising energy prices beginning to mirror such increases in demand, efforts to reduce consumption have taken on new urgency for Canadian consumers. Not only are conservation efforts essential as part of an overall strategy for meeting Canadian energy needs, but they are increasingly necessary for Canadian households to undertake to avoid economic burden.

However, not all Canadians may have the ability to reduce household energy consumption because of barriers to participation. These barriers may include the inability to finance changes to heating equipment or household features that would reduce energy bills. There can be language and educational barriers which may constrain take-up. As well, there are structural barriers to many rental households participating in conservation programs. Landlords that pass on energy costs to tenants may be ambivalent about making expenditures to benefit such tenants and tenants whose energy costs are included in their rent have little incentive to expend household income on conservation.

Statistics Canada defines low income as "an income threshold below which an average family will likely devote a larger share of its income to the

necessities of food, shelter and clothing that an average family would". In 2000, the incidence of low income households among the Canadian population was 16.2%. The average Canadian household expended 20.4 % on shelter costs (including utilities)<sup>1</sup>.

It is unlikely that energy costs are going to be reduced in the near term. Analysts predict that the long term prices for natural gas and energy are up and are likely to stay that way. In the Northeastern United States, low income customers have already experienced potentially catastrophic increases in heating between 9.4% and 113.6% in heating bills since 2001 with the likelihood of more such increases occurring as demand increases<sup>2</sup>. The need for the removal of barriers, and in particular financial barriers, to access to energy conservation measures is likely becoming acute in Canadian jurisdictions as well.

An Ontario-based study in 2004 proposed a package of basic and extended measures which involved home assessments, energy conserving equipment and education. The cost of basic measures was \$1000 and those of extended measures including the replacement of furnaces and appliances was \$3700<sup>3</sup>. These monetary amounts show a requirement for external funding for low income customers to access the conservation savings conservatively estimated in this report at 20% of energy costs. The structural problems associated with the misplaced benefit incentives referred to above also has to be solved for low income tenant renters.

---

<sup>1</sup> "Low income cut-offs for 2004 and low income measures for 2002", Statistics Canada 2005, p.7

<sup>2</sup> "Impact of Projected Prices on Low Energy Bills for 2006", PowerPoint presentation, Oak Ridge National Laboratory, September 2005

<sup>3</sup> "Low Income Energy Efficiency Program", Indeco and LIEN, December 2004.

There are numerous examples of successful programs that have been undertaken in various jurisdictions to address the problems of barrier reduction. One of the most successful models has been undertaken in the United Kingdom associated with the policy concept of “fuel poverty”. Fuel poverty is said to exist where a household has to spend over 10% of its income on all fuel use to heat the home to an adequate standard of warmth. The major causes of fuel poverty has been identified by the government as poor home energy efficiency and low incomes. The U.K. program to end fuel poverty has set definite goals for ending fuel poverty within a fifteen year window.

This report also describes programs that address the energy needs of disadvantaged groups; such needs that may, if not remedied impair their ability to participate in conservation programs. These include emergency programs, energy bill assistance, and consumer protection measures. Emergency programs address particular crises, chiefly financial that may result in the disconnection of customers from the network. Energy Bill assistance programs attempt to remedy systemic financial ability to pay energy bills from meager household income. Consumer protection programs cover a wide variety of programs from protection of customers from disconnection in winter to implementation of higher efficiency standards for housing or electrical appliances.

The report principally concentrates on programs associated with enabling conservation efforts on the part of utility customers who would otherwise be unable to do so. The measures described include those offered in the United

Kingdom, the United States and Canada. In the United States, there are four major mechanisms for addressing the removal of barriers. These are Low Income Home Energy Assistance Program (LIHEAP), Weatherization Assistance Program (WAP), System Benefits Funds, or Utility financing. The conservation and weatherization services funded by these programs generally involve common sense measures that are made accessible to program participants. These measures include energy audits, fuel switching including hot water conversion, insulation for attics, compact fluorescent lighting, energy efficient refrigerators, energy efficient furnaces, water heater blankets, weatherstripping, caulking, and repairs to reduce air infiltration.

In the United Kingdom, the campaign against fuel poverty attempts to carry out the government directed strategy through mechanisms that include both public and private initiatives. These include the establishment of energy efficiency obligations through Ofgem, the regulator of gas and electricity suppliers. Such obligations, called the Energy Efficiency Commitment (EEC), require and incent such suppliers to carry out improvements in energy efficiency by way of innovative actions. Over a three year period from 2002-2005, the EEC resulted in savings of approximately \$70 CDN per year to low income households. The EEC programs consist primarily of the same menu of measures funded in the United States that are described above. Other programs include the funding of energy efficient partnerships to achieve energy efficiency in the building process by doing such things as developing national standards and best practices. Local authorities fund home improvement agencies that provide cost effective repair and maintenance assistance to clients that are unsuitably housed.

The report also describes efforts to extend low income conservation programs to disadvantaged customers in various Canadian provinces. In Quebec, Equiterre carries out audits and follow up refits and education of customers which have achieved estimated savings in aggregate that are double the cost of the program. As well, the expenditures have been shown to produce job growth at a higher rate than power generation projects.

In Ontario, electric distribution companies have embarked upon major initiatives at the behest of the Ontario Energy Board to fund conservation programs from their rates. Social housing buildings have been targeted for energy audits to identify all possible ways to save energy from switching light bulbs to installing a new furnace. Natural gas local distribution companies (LDCs) have been delivering demand side management programs to gas consumers for over a decade. The report describes how one LDC, Enbridge will be attempting to make its residential conservation programs more accessible to low income customers through a strategy of education and outreach. In addition to the efforts by gas and electric LDCs the Ontario government's own conservation bureau operated by the Ontario Power Authority will spend \$235 million (with another 75 million dollars leveraged) over five years on low income programs addressing the needs of low income homeowners and low income and social housing tenants.

The OPA's program measures derive from a study financed by the Ontario Government and the Toronto Atmospheric Fund referenced earlier. The study gave the following general recommendations for low income conservation programs:

- 1) The focus should be on savings associated with energy for the safe preparation of food, home heating and cooling (for vulnerable groups)
- 2) The plan should meet immediate needs of low-income and at the same time produce long term (but based on preventative measures)
- 3) Prior to program implementation, the overall strategic program planning should be negotiated with low income and advocacy groups
- 4) Clear and simple screening process for identifying program participants
- 5) All low-income households need to be included (including renters)
- 6) The program funds should not come out of other subsidies or financial support given to participants
- 7) Upfront cost to participants will not be required for energy efficiency upgrade programs
- 8) Energy efficiency and conservation programs should address the following components:
  - a. Appliances
  - b. Envelopes
  - c. Heating
  - d. Cooling
- 9) Delivery of programs should be done by local community groups with experiences in delivering energy efficient programs<sup>4</sup>

In assessing the cost effectiveness of low income conservation programs, it is important that the overall impact of conservation programs upon demand and the resultant avoided costs be considered. In Ontario, for example, every

---

<sup>4</sup> “Low Income Energy Conservation and Assistance”, Indeco, 2004 p. 23

1000 MWs of new electricity production requires an expenditure of at least \$1.6 billion. It means that expenditures such as those of the OPA above are at least 50% justified by the avoided costs alone as they will reduce demand by 100 MW.

Other studies have confirmed the viability of these programs. Assessments of California's Low Income Efficiency Plan filed with the California Public Utilities Commission show bill savings to cost ratios which range from .31 to .97.<sup>5</sup> This provides comfort that the additional avoided costs and societal benefits create a total amount that far eclipses the costs for the implementation of the usual range of conservation measures previously discussed.

As well, an important 1999 study has shown that the non-energy, non-environmental benefits to the utility of investing in low income efficiency programs are substantial. These benefits include lower utility costs for accounts collection, emergency services, bad debts and reconnections and societal benefits mainly in the form of reduced social service delivery costs. The authors of the study conservatively estimate that such benefits, in aggregate should approximate 50% of the program costs for the utility<sup>6</sup>.

While there is no formula for removals of barriers to access for conservation programs, the following should be considered as part of the package:

---

<sup>5</sup> "Joint Utility Low Income Energy Efficiency Program 2004 Costs and Bill Savings Report", CPUC April 2005

<sup>6</sup> "Analysis of Low-Income Benefits in Determining Cost-effectiveness of Energy Efficiency Programs", John Howat and Jerrold Oppenheim, NCLC, April 1999



1. Customer education and outreach, including home audits and follow up;
2. Elimination or reduction of up-front costs
3. Service delivery that is rationalized to involve delivery agents with experience with the community

Finally, there are two general observations that can be made about the effectiveness of such programs to date:

1. The programs have a material effect upon the well-being of the consumer participants, including but not limited to a reduction in household expenses.
2. The program outlays are easily justified financially from the standpoint of any reasonable accounting for benefits, and politically from its ability to provide a higher standard of living for those citizens who are too marginalized to obtain an equivalent positive effect on their own.

## **Introduction**

There is universal agreement that an important component of any public policy regarding energy use and supply is the goal of reduction of overall consumption. The Canadian government has been clear about the importance of this objective. In particular, the supervising federal department, Natural Resources Canada (NRCAN) has noted the following<sup>7</sup>:

In all of Canada's economic sectors, the responsible and efficient use of our energy resources helps protect our environment and boost the nation's bottom line. One of the principal goals of Natural Resources Canada's (NRCan's) Energy Technology and Programs Sector is to continually improve energy efficiency in Canada through a variety of initiatives in the residential, commercial, industrial and transportation sectors.

But the tools available to reduce energy consumption by individual Canadians may be limited. Energy inefficient furnaces, appliances and fixtures may be expensive to replace with substitutes that consume less energy. It may be difficult for Canadians with modest incomes to obtain the financial capital to finance the replacements even though the financial payoff may be substantial over the life of the replacement unit. For tenants, there may be little incentive to invest in energy conservation where the benefits of the improved unit may be short lived. For landlords, the direct pass through of energy bills to their tenants may provide scant reason to help

---

<sup>7</sup> [http://www2.nrcan.gc.ca/es/es/efficiency\\_e.cfm](http://www2.nrcan.gc.ca/es/es/efficiency_e.cfm)

the tenant conserve. Finally, for some energy customers, there may be significant barriers to obtaining understandable information and being able to put in place a strategy to reduce energy. This may come as a result of language difficulties or an inability to attend to conservation issues because of pressing matters of economic survival.

This report examines some of the solutions that have been tried by various jurisdictions to deal with the special problems posed by low income energy users in becoming full participants in conservation or demand side management problems. Where possible, the report will assess the effectiveness of the strategies from the perspective of system benefits as well as a cost/benefit and energy savings standpoint .

### **Identifying the Target Groups**

Because increases in energy costs have a limiting effect on the disposable income of all households, it is reasonable to attempt to identify the target group or groups who are should represent the priority for the delivery of benefits pursuant to the programs under discussion by this paper. It is not disputed that there could be some access by such target groups to conservation and demand programs intended for the general consuming public. What we are seeking to achieve, is not just to isolate only those segments of the population bereft of any access to CDM programs (although they would certainly fall within the target group specifications), but rather to identify those communities where it is necessary to develop special

programs and approaches to bring participation rates up to at least the levels of more advantaged population segments.

A first starting point is likely a reasonable classification based upon income. Statistic Canada’s definition of low-income “an income threshold below which a family will likely devote a larger share of its income to the necessities of food, shelter and clothing than an average family would.”<sup>8</sup> In 2000, the incidence of low income people among the Canadian population living in private households is 16.2% = 4,720,485 persons<sup>9</sup>

**Table 1: Low Income Cut-Offs (1992 Base) After Tax**  
LICOs research series paper p 18

Size of Family Unit	Community Size		Urban Areas		
	Rural Areas	Less than 30 000	30 000 - 99 999	100 000 - 499 999	500 000 and over
2004	\$	\$	\$	\$	\$
1 person	11 025	12 617	14 075	14 253	16 853
2 persons	13 418	15 357	17 131	17 347	20 512
3 persons	16 709	19 121	21 332	21 601	25 542
4 persons	20 844	23 856	26 613	26 948	31 865
5 persons	23 736	27 165	30 305	30 686	36 285
6 persons	26 324	30 127	33 610	34 032	40 241
7 or more persons	28 912	33 089	36 913	37 378	44 197

However, from a program delivery standpoint the use of the LICO statistics creates a starting point rather than final definitive target category. There are other statistical tools that may serve to sharpen the focus for any analysis . For example, in Canada, the spending on shelter costs (which includes utilities) is on average \$13 913, 20.4% a total average household expenditure

<sup>8</sup> “Low income cut-offs for 2004” and low income measures for 2002”, Statistics Canada 2005, p.7

<sup>9</sup> “Incidence of Low Income among the Population living in Private Households by Province (1996 and 2001 Censuses).” Statistics Canada August 5, 2005i. <http://www40.statcan.ca/101/cst01/famil60b.htm>

of \$68 118<sup>10</sup>. When spending on shelter costs gravitates to much larger percentages of household expenditures, this may result in patterns of deprivation as other necessities of life are sacrificed.

As we shall also discuss, there are other barriers to service delivery that may exist as a result of age, language, education, or other disability. A determination of the extent of the needs for special CDM programs for these population groups should be required.

A quantification is at least a start.<sup>11</sup> In Canada, the population that is 65 years old and over currently numbers 4,141 000<sup>12</sup> out of a total population of 31 946 300. In other words, close to 7% of Canadian seniors live under the LICO threshold (National Advisory Council on Aging 2006). This figure is considerably higher regarding seniors who are unattached<sup>13</sup> (National Advisory Council on Aging 2006).

---

<sup>10</sup> “Average Household Expenditures, by Provinces and Territories.” Statistics Canada July 13, 2005k. <http://www40.statcan.ca/l01/cst01/famil16d.htm>

<sup>11</sup> The issue of student status is perhaps relevant as an additional qualifier or barrier to program take-up. Enrolment data for post secondary students is a bit unclear, but according to the Canadian Federation of Students, the full-time enrolment in Canada is approximately 1,040,000. This report will not address this specific potential barrier

<sup>12</sup> Statistics Canada. “Population by sex and age group, by provinces and territories, 2004.” June 23, 2005a. <http://www40.statcan.ca/cgi-bin/getcans/sorth.cgi?lan=eng&dtype=fina&filename=demo31a.htm&sortact=1&sortf=5>

<sup>13</sup> According to the National Advisory Council on Aging (2006), “some 258,000 seniors were living under the after-tax LICO in 2003, of which 154,000 were unattached women.” To clarify, seniors living under the LICO spanned from 2% in Saskatchewan to 10.3% in British Columbia and Québec (National Advisory Council on Aging (2006).

Occurrence of low income among seniors — Canada, 2003 (National  
Advisory Council on Aging 2006)

Percentage of seniors with low after-tax income			
	Both sexes	Men	Women
All seniors	6.8%	4.4%	8.7%
Families of seniors	2.2%	2.0%	2.3%
Unattached seniors	17.7%	14.7%	18.9%

Source: Statistics Canada, 2005

With respect to disabled Canadians, the Participation and Activity Limitation Survey uses the World Health Organization’s (WHO) framework of disability provided by the International Classification of Functioning (ICF). This framework defines disability as the relationship between body structures and functions, daily activities and social participation, while recognizing the role of environmental factors.

“For the purpose of PALS, persons with disabilities are those who reported difficulties with daily living activities, or who indicated that a physical, mental condition or health problem reduced the kind or amount of activities they could do. The respondents’ answers to the disability questions represent their perception of the situation and are therefore subjective.”<sup>14</sup> Using these criteria, it is noted that 1,514,380

---

<sup>14</sup> Statistics Canada. “Definitions: Disability.” June 23, 2005b.  
<http://www.statcan.ca/english/freepub/89-577-XIE/def.htm>

out of 11,192,730 (13.5% in 2001) are considered disabled in Ontario<sup>15</sup> and 3,601,270 out of 28,991,770 (12.4% in 2001) were considered disabled in Canada<sup>16</sup>.

Literacy is an important consideration in evaluating the effectiveness of programs designed to be delivered to the general public. In June 2000, Statistics Canada and the Organization for Economic Co-operation and Development (OECD) released the final report from the groundbreaking 1994 International Adult Literacy Survey (IALS). The first international survey of its kind, IALS provides a comparison of literacy levels. The survey found that 22% of Canadians were at level 1 in that they had difficulty reading and have few basic skills or strategies for decoding and working with text. Another 26% were found to be at level 2, having limited skills and being unable to deal with material that was simply laid out. In effect, 48% of Canadians fell below the literacy level considered to be the minimum for participation in society.<sup>17</sup>

Child poverty is a corollary issue that requires consideration. Young children (under 6 years old) living in low-income households are generally a factor of the 'vulnerable population' when discussing federal energy efficiency programs for low-income households in the United States. According to Unicef Canada, 14.9% of Canadian children live under the

---

<sup>15</sup> Statistics Canada. "Population with and without disabilities, and disability rate, by province, Canada and Provinces, 2001." June 23, 2005c.

<sup>16</sup> Statistics Canada. "Population with and without disabilities, and disability rate, by province, Canada and Provinces, 2001." June 23, 2005c.

<sup>17</sup> <http://www.literacy.ca/litand/1.htm>

national poverty<sup>18</sup> lines<sup>19</sup>. As such, the presence of young children in low-income environments may affect decisions made in implementing national energy efficiency programs.

Additional cultural barriers may inhibit receptiveness to take-up of CDM programs beyond language. As of May 2001, some 18.4% of the total Canadian population was born outside the country (the highest percentage in the nation's history).<sup>20</sup> While it is unlikely that energy profligacy is a predominant feature of any culture outside North America, there may be differing levels of knowledge and response associated with energy use that may require amelioration.

As we will also discuss later, the form of occupation of principal dwelling has important implications for the design and delivery of CDM programs. Rental tenants may be obliged to assume the costs of electricity as part of their tenancy arrangements. In that circumstance, landlords may lack the ordinary financial incentives associated with making energy conservation improvements and the tenants may be financially unable or unwilling to make capital expenditures to improve the landlord's property. According to 2003 Statistics Canada figures, the residents owned 65.7% of private dwellings, while 34.3% occupied rental accommodation.

---

<sup>18</sup> This statistic only shows the percentage of children living in 'relative' poverty, defined as households with income below 50% of the national median income (Unicef 2005: 4).

<sup>19</sup> Unicef. Report Card No. 6: Child Poverty in Rich Countries 2005: The Proportion of Children living in Poverty has Risen in a Majority of the World's Developed Economies. The Unicef Innocenti Research Centre: Florence, Italy. Retrieved January 20, 2006.

<sup>20</sup>[http://www12.statcan.ca/english/census01/products/analytic/companion/etoimm/canada.cfm#proportion\\_foreign\\_born\\_highest](http://www12.statcan.ca/english/census01/products/analytic/companion/etoimm/canada.cfm#proportion_foreign_born_highest)



The location of the dwelling may have a bearing on the capability to deliver on energy conservation measures. In particular, rural or remote locations may have fewer options when it comes to choice of energy supply or cost effective reduction measures. The 2005 Statistics Canada figures report the following:

- Urban population (of Canada) – 22 415 368 individuals
- Rural population (of Canada) – 6 336 225 individuals
- Population living on reservations/reserves – in Ontario 42 365; in Canada 321 855

The form of energy used by the target consumer is also obviously of relevance, particularly as it relates to the preferable CDM measure of fuel switching. The Statistics Canada data noted above advises the following concerning the percentage of Canadians that use each form of energy as their principal heating fuel :

- Oil/other liquid fuel – 12.5%
- Piped gas (natural gas) – 49.1%
- Bottled gas (propane) – 0.8%
- Electricity – 33.0%
- Wood – 4.2%
- Other – 0.3%

## **The Likely Future of Energy Costs and the Political Response**

It is not the intent of this report to provide an empirical analysis of the cost drivers of current Canadian energy prices and/or a projection or model that forecasts where such prices are likely to be in the future. Very clearly, Canadians are paying substantially higher bills to meet their energy needs. As the chart below indicates, gas and electricity prices have spiked and been unstable for the last couple years and predictions have stated that natural gas prices will track higher than the historical average<sup>21</sup>. Analysts<sup>22</sup> ascribe the upward price fluctuations to a number of factors. These include:

- (1) there is lower production from new gas wells and depletion of older wells;
- (2) Natural gas is no longer in surplus. A bubble of oversupply depressed prices for 10 years. The gas market now sees the same shortages that have governed the oil market for 25 years.
- (3) The long term price trend is up due to market fundamentals, and gas traders will need a good reason to reverse this trend; and
- (4) Economic outlook is improving and this will increase energy consumption

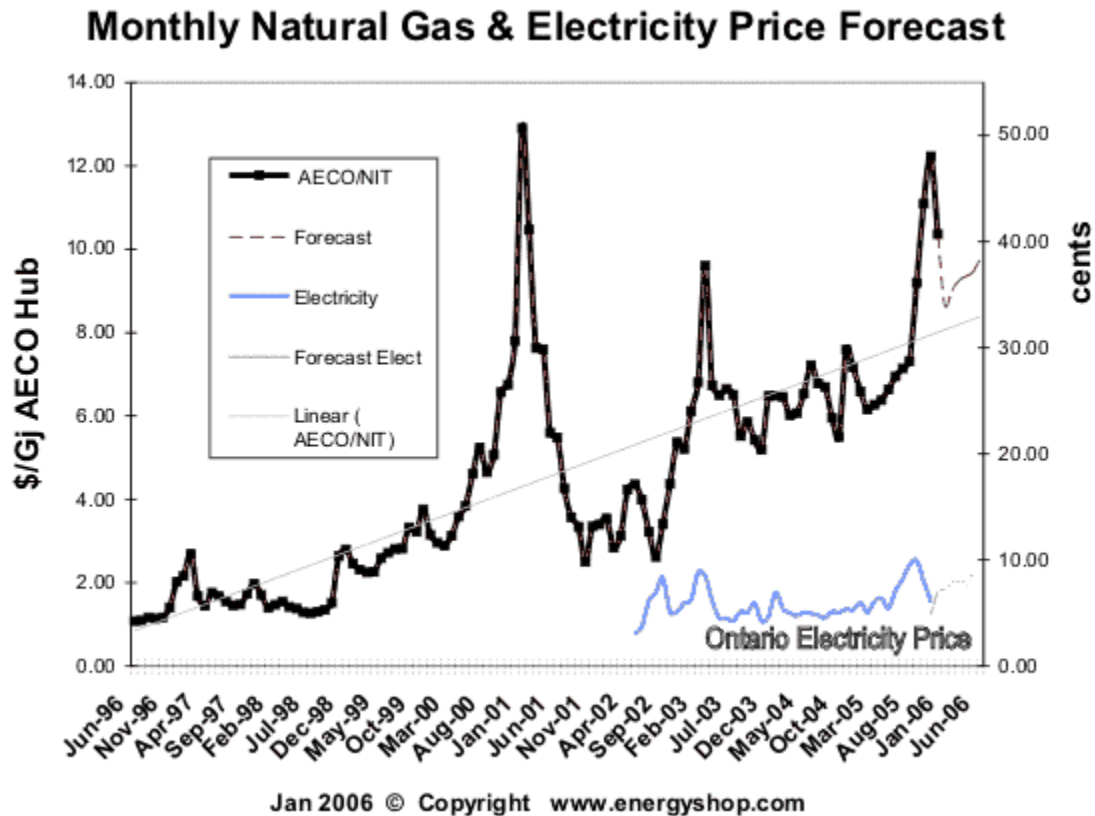
Energyshop.com is a private company independent from all gas and electricity suppliers, generators, or distributors formed in 1998 with the mission to advance the energy marketplace through the application of technology. The graph below shows the monthly index natural gas prices in Cdn \$/GJ and ¢/m<sup>3</sup>. [Enerdata Ltd.](#) Is the

---

<sup>21</sup> Energyshop.com. "Natural Gas Prices – Historical and Forecast." Retrieved January 22, 2006.

<sup>22</sup> A useful compendium of analysts' predictions can be found at <http://www.energyshop.com/es/contactus/mediareport.cfm>

source for the historical data. The forecast was created for educational purposes and considers analyst opinion, weather, oil prices, gas storage, drilling rates and economic indicators.

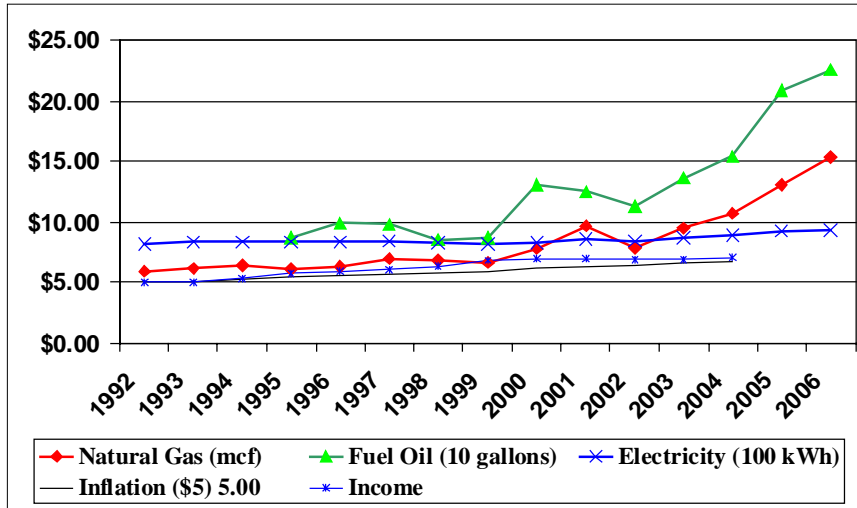


Source: Energyshop.com (2006)

A projection concerning impacts on low-income energy bills in the United States that is also likely instructive for Canadian application has been prepared by the Oak Ridge National Laboratory (ORNL) of the U.S. Department of Energy in September 2005. The first chart shows the rate of increase in residential energy bills by fuel type, the second chart sets out the rate of increase in heating bills for low-income households.

## RATE OF INCREASE IN RESIDENTIAL ENERGY PRICES BY FUEL TYPE

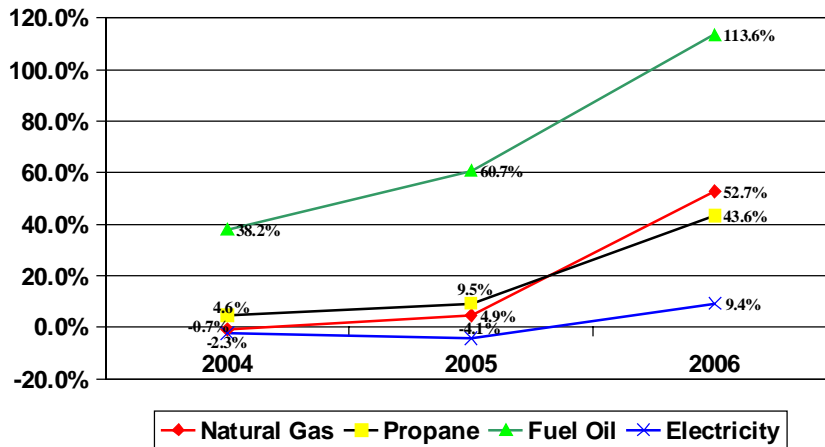
Since 1992  
(Nominal dollars)



Sources: DOE/EIA Short Term Energy Outlook, September 2005, Bureau of Labor Statistics, Bureau of the Census

## RATE OF INCREASE IN HEATING BILLS FOR LOW- INCOME HOUSEHOLDS BY FUEL TYPE

Since 2001



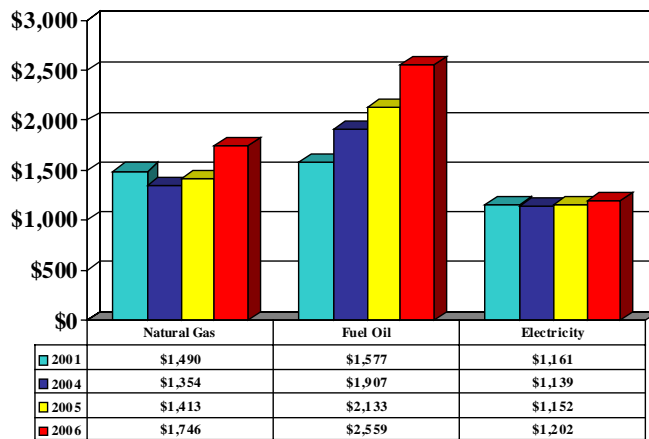
Source: DOE/EIA Short Term Energy Outlook, September 2005

As the charts indicate, American consumers have been experiencing the same pattern of energy price increases as their Canadian counterparts with

particularly worrisome consequences for low-income consumers. As the second chart shows low-income households have experienced potentially catastrophic increases of 9.4% to 113.6% in heating bills since 2001 depending on fuel type. ORNL also projected likely total residential expenditures for low-income households by region. The projection for the Northeast region is set out in the chart below and continues and to some extent exacerbates the pattern of increases previously witnessed.

**PROJECTED TOTAL RESIDENTIAL ENERGY  
EXPENDITURES FOR LOW-INCOME HOUSEHOLDS  
By Primary Heating Fuel**

NORTHEAST



Source: ORNL Tabulation from EIA STEO & RECS

There is little reason to believe Canadian consumers will be insulated from similar kinds of price hikes. What will be the impact of the continuation of such increases upon consumers with the least ability to pay? As well, could the increases have the potential of forcing governments to undertake policies that alleviate the short term symptoms without providing long term solutions or exacerbating the problem itself. This occurred as recently as 2002 in Ontario where the provincial government capped commodity electricity rates for consumers but continued to pay market rates for all electricity consumed.

Along the same lines, in the discussion of possibly precipitous increases in energy costs is the recent American experience in 2005 following Hurricane Katrina. As gasoline prices rose, severe damage to the oil infrastructure along the Gulf Coast decreased production and supply fanning concerns about limited supply and causes dramatic price spikes as much as \$6 in some areas. As many states acted to reduce fuel sales taxes, critics noted that these taxes funded public transportation and their reduction was counter-productive to tamping the demand that was, in part, driving price hikes.

<sup>23</sup> The aftershocks of last fall continue to be felt with potential damaging results for public policy. As one think tank noted<sup>24</sup>:

“Escalating fuel costs have pushed up wholesale power prices and are beginning to deliver rate shocks to retail customers. The backlash against rate shocks has begun and will likely intensify, diverting attention from the issues of dwindling excess generating capacity and the need to resolve resource adequacy”.

The possibility of inappropriate political response to rapidly escalating energy prices is thus one additional factor compelling the adoption of programs that allow all consumer segments to reduce consumption and

---

<sup>23</sup> On September 2, Georgia Governor Sonny Perdue signed an executive order to eliminate the state’s motor fuel sales tax from the cost of gasoline. A bill allowing the governor to lift the state’s 6 percent sales tax on gasoline and diesel fuel during an emergency passed the Michigan House on September 6. The bill, which then went to the Senate, would allow the governor to issue an executive order to remove the sales tax for a period of time. About 75 percent of the sales tax revenue goes to the state’s school aid K-12 public education budget. On September 20, the New York Senate passed a cut in the sales tax on gasoline. Under the plan, the state and localities would charge sales tax only on the first \$2 of a gallon of gas. A subsidy for home-heating bills also was part of the bill. Other states considered suspending the gasoline tax for a set amount of time, repealing the gas tax in an emergency, or repealing recently increased gasoline taxes.

<sup>24</sup> <http://www.cera.com/news/highlights/>

effect net savings. The practical effect is both to help reduce the demand that augments such crises but also establish a kind of safety net that insulates the least fortunate from price shock.

### **Financial Barriers to Participating By Target Group**

This report is primarily concerned with implementing effective conservation measures to meet the needs of groups that have barriers (chiefly financial) to participation. Some understanding of the likely size and nature of the financial commitments associated with such measures would be helpful in establishing at a minimum the legitimacy of public involvement in the process.

In 2004, with the assistance of the Government of Ontario and the Toronto Atmospheric Fund, Indeco consulting and a coalition of social action, community and environmental groups styled the Low Income Energy Network (LIEN) produced a report that set out a program for low income consumers that involved home assessments, installation of energy conserving equipment and education. The equipment elements of the program involved “basic and “extended” measures. The basic measures included weatherization/draftproofing, replacement of incandescent bulbs, programmable thermostat, motion sensors for lighting, water heater pipe wrap/heat trap, low flow showerheads and faucet aerators, clothesline/rack and clothespins. The extended measures included high efficiency heating equipment replacement, appliance replacement (refrigerator, washers) replacement of or supplement to electric water heaters, and insulation. The

report estimated the costs of the basic measure at \$1000 for this program, with an average cost per household of \$3700<sup>25</sup>.

While the elements of any conservation package may be subject to debate, it is clear that the price tag associated with these or equivalent remedial measures make it difficult to assert that the market will look after this problem by providing the incentive for low income customers to invest, particularly when the premises are most likely to be of the rental variety. Even for tenants faced with exorbitant costs arising from electric heat, it may be impossible to find or justify the necessary outlay to lower monthly costs.

There are existing building retrofit incentive programs in Canada (i.e., NRCan's Energuide for Housing Retrofit Incentive – EGHRI). However, due to the high costs that are required to be expended upfront, these programs present a barrier to any future low-income participants<sup>26</sup>.

Despite the seemingly obvious requirement for funding from a source other than the finances of the individual customer, some vexing problems remain. In the event that an investment is justified in terms of likely societal and customer benefits, how does the potential enhancement of privately owned accommodation square with public welfare aspects of any program. Does that view change if the property is sold or converted to use other than rental housing? As well, how does one ensure that tenants who pay for energy through their rent get the benefit of any conservation retrofit financed through this process. One of the more ambitious Ontario programs described later in

---

<sup>25</sup> Indeco et.al, 2004, p.15

<sup>26</sup> IndEco Strategic Consulting Inc. *Low Income Energy Conservation and Assistance*. Toronto, Ontario: IndEco Strategic Consulting Inc. 2004.



this report notes other potential unintended consequences that follow from the successful execution in the program's conceptual document<sup>27</sup>:

It is important to note that under the Tenant Protection Act building owners and managers may apply to the Ontario Rental Housing Tribunal for an above guideline rent increase, if major capital work has been done (including energy efficiency upgrades) to their units. Steps should be taken by the Conservation Bureau and the Province to ensure that the capital costs of energy efficiency measures funded through this program are not passed on to the renters through approved above guideline rent increases.

Unfortunately policy makers are in the early stages of attempting to provide solutions. The American experience with LIHEAP funded initiatives described later in this report has led to a variety of policy fixes, some of which seem rather counter-productive. In some states (Georgia and Pennsylvania), households are not eligible to receive program benefits. Other states (Delaware, Missouri and Tennessee) provide the same benefits. Others provide fixed dollar amounts (Nevada, New York or Rhode Island) or provide different criteria (Iowa, Indiana or Illinois) or perform simple estimation techniques that apportion costs (Vermont, Idaho).

Finally, how does one ensure that the administration of any initiative does not overwhelm the content delivered through the programs because of

---

<sup>27</sup> *ibid* at footnote

policing of eligibility requirements and similar qualifying measures. The American experience with administering Lifeline and Linkup programs to assist low income customers with establishing and maintaining appears to teach the principle that where such programs are unable to piggyback upon the administration of other income related programs such as welfare or Veterans Benefits, self identification for potential beneficiaries coupled with spot audit appears to be the most cost effective way to ensure service delivery. It also appears to be the choice of the FCC in its 2004 decision setting eligibility for participation in federally funded Lifeline and Linkup initiatives based on customer self certification as to participation in a number of income dependant programs or by qualifying for a matching state lifeline program.

### **Fuel Poverty Approach- The U.K. Experience**

In examining, the various solutions to the program design and delivery of solutions to low income energy needs, the policy developments occurring in the United Kingdom in the last 7-8 years merit particular scrutiny. In particular, the British authorities have created the policy concept of “fuel poverty “ to address the substantial set of effects associated with energy costs outstripping a household’s ability to pay.

The origin of fuel poverty as a policy driver came about through a 1999 Inter-Ministerial Group that was set up to design a strategy to address fuel poverty ranging across different departments and government functions. In 2001 the U.K. Fuel Poverty Strategy was released which described actions , current and planned to tackle the issue of fuel poverty. It set objectives and

targets in which to do so. In so doing , the report set out the parameters of the government’s fuel poverty efforts and what was at stake in the initiative:

A fuel poor household is one that cannot afford to keep adequately warm at reasonable cost. The most widely accepted definition of a fuel poor household is one which needs to spend more than 10% of its income on all fuel use and to heat its home to an adequate standard of warmth. This is generally defined as 21°C in the living room and 18°C in the other occupied rooms - the temperatures recommended by the World Health Organization.<sup>28</sup>

The main cause of fuel poverty in the UK is a combination of poor energy efficiency in homes and low incomes. Other factors include the size of some properties in relation to the number of people living in them, and the cost of fuel. Fuel poverty damages people’s quality of life and imposes wider costs on the community. The most direct effects are in relation to the health of people living in cold homes. Although these risks apply to all people, older people, children, and those who are disabled or have a long-term illness are especially vulnerable.<sup>29</sup>

The Fuel Poverty Strategy has a continuous monitoring function and annual update reports are published to chart progress of the strategy. A key

---

<sup>28</sup> U.K. Fuel Poverty Strategy 2001, Department of Trade and Industry, Chap. 1, p. 1

<sup>29</sup> Ibid at Executive Summary , p. 3

objective also commits the government to working towards having a stable and predictable fuel market and giving priority to new monitoring techniques to track all aspects of energy reliability

In 2003, in a white paper released by the U.K. Departments of Industry and Trade, Transport, and Environment Food and Rural Affairs, the Strategy was again referenced and confirmed:

We are committed to eradicating fuel poverty and have a legal obligation under the Warm Homes and Energy Conservation Act 2000 in England and Wales and the Housing (Scotland) Act 2001 in Scotland to specify a target date by which, as far as reasonably practicable, this will be achieved... We reaffirm these commitments and policies. We aim that as far as reasonably practicable no household in Britain should be living in fuel poverty by 2016.<sup>30</sup>

The white paper noted what it termed encouraging progress towards this goal. In 1996 there were 5 1/2 million UK households in fuel poverty. As of the date of the report, there were around 3 million, of which about 2 million were vulnerable households. The paper projected that another million households could be removed by 2010, by the continuation and amelioration of the Fuel Poverty programs.<sup>31</sup>

---

<sup>30</sup> “Our Energy Future- Creating A Low Carbon Economy”, Depts of Industry and Trade, Transport, DEFRA,p.111

<sup>31</sup> There is also collaboration with devolved administrations such as Scotland and Wales. In Scotland, for example, the objective is to remove fuel poverty by November 2016 (as stated in the Housing (Scotland) Act 2001)

While the programs associated with the UK Fuel Poverty Strategy are described elsewhere in the report, the approach is to be noted because of the singularity of its focus, the clear cut definitional parameters of its targets and results, its determination to meet ambitious commitments and its continuous monitoring and reporting. The authors of this report find such an approach commendable as model.

### **Programs that Address Barriers to Participation**

This report organizes the discussion of programs that address the barriers to participating in conservation programs (and staying on the energy networks to do so) in the following categories: Emergency Programs, Energy Bill Assistance, Energy Conservation and Demand Programs, and Consumer Protection Programs.

#### **Emergency Programs**

While not strictly classified as programs directed to removing barriers to lower energy consumption, there exist programs in various jurisdictions that are designed to ensure that a customer does not become cut off from access to energy supplies in an emergency. These programs provide financial assistance that is designed to cope with a particular crisis including the breakdown of heating equipment, a potential cut-off of energy as a result of failure to pay or a spike in energy prices causing calamitous results to the household budget.

In the United States, there exists the Low Income Home Energy Assistance Program (LIHEAP), set up by statute, the Low-Income Home Energy Assistance Act of 1981, which is administered by The Division of Energy Assistance within the U.S. Office of Community Services (OCS). If an applicant can't afford to pay the home energy bill, LIHEAP will help eligible low-income homeowners and renters meet their home heating and/or cooling needs<sup>32</sup>. Individual states make decisions about the program requirements for emergency assistance under LIHEAP, including criteria and budget carved from the overall LIHEAP state entitlement.

LIHEAP is currently a \$1.8 billion annual federal program. Two thirds of the American families using LIHEAP programs have

- State administered
- up to 15% of funds are spent on energy efficiency measures
- 2/3 of the families using LIHEAP have annual incomes under \$8000
  - including seniors, families with children, aboriginals and the disabled

Because LIHEAP provides funding for low-income rate assistance programs that are aimed at preventing eleventh hour emergency situations from

---

<sup>32</sup> In October 2003, the National Energy Agency Directors Association (NEADA) conducted the first U.S. survey of choices made by LIHEAP-recipients households when they cannot afford to pay their energy bills<sup>32</sup>. The survey data shows the importance of LIHEAP in meeting energy needs of the disadvantaged. Without LIHEAP, only 9 percent of the respondents had an energy burden of less than 5 percent, and after LIHEAP the proportion of respondents with an energy burden of less than 5 percent increased to 27 percent. With an average 2003 LIHEAP grant of \$313, the proportion of families with energy burdens approximating 25 percent declined from 12 percent to 4 percent. Moreover, 88 percent of the respondents replied that LIHEAP had been very important in meeting their energy needs.

occurring in households facing deprivation, the exclusion of such programs from the heading of emergency programs is somewhat artificial. Hopefully, the different kinds of measures funded by LIHEAP will be fully described under the various program categories.

Some examples of emergency programs that are financed at least in part by LIHEAP are as follows:

### **New Hampshire**

Only families are eligible for the Temporary Assistance of Needy Families Program (TANF). The terms of eligibility require that the household of the applicant must be a participant in the Family Assistance Program (FAP) or the New Hampshire Employment Program (NHEP) (New Hampshire Department of Health and Human Services 2006). In addition, there must be dependent children residing in the household and they must lack “parental support or care due to death, continued absence or because on or both parents in a two-parent home are disabled, unemployed or working less than 100 hours a month. By such emergencies as homelessness, utility shut-off, or lack of heat, hot water or cooking fuel. This program is administered by the State Welfare Program<sup>33</sup> (IndEco 2004:31) and provides ( cash assistance twice a month by transferring funds electronically. It is directly deposited

---

<sup>33</sup> IndEco Strategic Consulting Inc. *Low Income Energy Conservation and Assistance*. Toronto, Ontario: IndEco Strategic Consulting Inc. 2004.

into the account of the applicant and can be used at any ATM or point of sale machine<sup>34</sup>.

## **Ohio**

The WCP (Winter Crisis Program) is administered by Community Action Agencies throughout Ohio Provides assistance once per heating season to eligible low-income households that are disconnected, threatened with disconnection, or have less than a ten-day supply of bulk fuel

Many other U.S. emergency programs rely upon utility or charitable support but attempt to integrate criteria and delivery with public parameters.

Examples include:

## **Seattle**

Emergency Low-Income Assistance (ELIA) sponsored by Seattle City Light provides assistance to low income City Light customers by making payments of up to 50% of delinquent City Light bills in emergency situations only. The maximum payment is \$200. Eligibility requirements stipulate that households must be at or below 125% of federal poverty level and can only receive funds once a year. Households must have already received benefits through the Seasonal Energy Assistance Program.

---

<sup>34</sup> New Hampshire Department of Health and Human Services “Welcome to the Temporary Assistance for Needy Families Program.” Retrieved January 10, 2006



## **Wisconsin**

The National Fuel Funds Networks Initiative (NFFN) consists of 250 members, including nonprofit agencies, utilities and government agencies, which provide utility bill assistance raised as charitable donations. In 2001-2002, fuel funds—which operate as energy banks, charitable energy assistance programs or bill assistance programs, provided approximately \$125 million in energy aid to almost two million households<sup>35</sup>. Fuel funds are the providers of last resort to families whose federal energy assistance has expired.

One of the stakeholders in NFFN is the Keep Wisconsin Warm Fund (KWWF). KWWF is a voluntary community-based program designed to fill the need for energy assistance to low-income people. The program is expanding state-wide and is available to individuals who meet the an eligibility criteria that is defined as having a family income that is 150% or less than the poverty level.

## **Canada**

### **Ontario**

In Ontario, there is a mix of public and private programs designed to meet crisis situations. These include:

---

<sup>35</sup>“The Impact of Rising Energy Prices on Low-Income Consumers”, Frances Sevel, NRRI, 2004, p.34

## Emergency Energy Fund

The Emergency Energy Fund is a program initiated in 2004 and since extended in response to the \$2.6 million proposal for energy assistance triggered by Share the Warmth<sup>36</sup>. The provincial government fund was supposed to be a one time \$2 million fund that will provide help to low-income Ontarians, including social assistance recipients and people with fixed incomes, facing energy related emergencies. Funded applicant expenses include energy arrears, security deposits and reconnection costs, to be paid directly to the energy providers as well as associated costs and arrears for natural gas, oil and other forms of energy. The maximum amount of assistance per household will be equivalent to two months' energy arrears and security deposit and reconnection fees, as required<sup>37</sup>.

## Share the Warmth Program

In Ontario, Share the Warmth, a non-profit charity purchases heat and energy on behalf of families, seniors, terminally ill and disabled persons at or near the poverty level.”<sup>38</sup> The Share the Warmth program provided emergency assistance to over 7900 people in 2002/2003; and increase of 25% over the 6300 persons assisted in 2001/2002 and an increased of 46% over the 5400 persons assisted in 2000/2001. Across the province, the

---

<sup>36</sup> Share the Warmth. “Program Reports.” Share the Warmth. July 28, 2005c.

<sup>37</sup> Ministry of Community and Social Services. “FAQ’s Emergency Energy Fund.” July 28, 2005

<sup>38</sup> “Keeping the Lights On”, Michael Janigan and Karen Miller, PIAC 1999, p.17

repeat user rate for applicants is less than 12%<sup>39</sup>. Since 2000 share the warmth has helped over 29 000 people and more than \$2 000,000 has been distributed in the form of direct energy assistance<sup>40</sup>.

## **Alberta**

“Alberta Human Resources and Employment helps low-income Albertans who have received disconnection notice from their gas or power company and have no other way of paying their overdue utility bills<sup>41</sup>.” Those that are not eligible include those that are already on support programs, such as on-reserve support, and the Special Needs Assistance for Seniors program. Seniors are provided utility assistance through this seniors’ program and thus are not eligible for the subsidization offered through the Alberta Human Resources and Employment department.

The Assistance for people facing utility termination notices is not just a one-time provision. Instead, the cases are dealt with individually and applicants have the chance of receiving assistance more than once. However, if arrears or deposits for the same type of utility require assistance more than once in a year, the recipient must repay the amount they received<sup>42</sup>.

---

<sup>39</sup> Share the Warmth. “Share the Warmth Proposal for Ministry of Community and Social Services.” July 28, 2005a.

<sup>40</sup> Share the Warmth. “Share the Warmth.” July 28, 2005b.

<sup>41</sup> Alberta Government, Human Resources and Employment. “Alberta Works: About Alberta Works.” Alberta Government. July 13, 2005.

<sup>42</sup> Alberta Works. “Fact Sheet: Emergency Assistance for Albertans Facing Utility Disconnection.” Retrieved January 16, 2006b.

## **Energy Bill Assistance**

Although not the central focus of this report, it is important to note the existence of programs designed to provide direct bill assistance to qualified applicants. These programs, make it easier for such consumers to pay on a regular and ongoing basis and prevent the debilitating pattern of debt, utility cut-off, and subsequent ability to reconnect. Reduction of consumption through effective programs can lower the necessity for bill assistance, but there may well be customers that require bill assistance to stay on the network notwithstanding such reductions. The central feature of these type of programs is the goal of making it easier for recipients to pay on a regular and ongoing basis.

Some of the elements of existing bill assistance programs include the arrangements for discounts to customer bills based on a fixed percentage or a fixed dollar amount. Some plans feature a variable discount where low income consumers receive a percentage discount on their energy bills dependent on their energy consumption. The discount decreases as consumption increases to encourage energy efficiency (IndEco 2004: 10). “For example, in Arizona, low income consumers receive 30% off the first 400kWh of electricity they use, then 20% off usage between 401 and 800kWh, 10% off usage between 801 kWh and 1200kWh and a \$10 credit for any usage above that point” (IndEco 2004: 10). PIPP (percentage of income payment) plans directly link the amount the customer bills to the household income. Other plans attack the problem of arrears by arranging

for payback or forgiveness of a portion of arrears over a period of time that is appropriate to the means of the customer .

Some examples of Bill assistance programs include the following:

## **California**

### California Alternate Rates for Energy (CARE)

CARE is a discount program for low-income households, tenants and residents of group living facilities, nonprofit migrant housing and migrant farm worker housing. CARE customers receive a 20% discount on electric and natural gas bills and are exempt from the rate increases approved in 2001 for Southern California Edison (SCE), Pacific Gas & Electric (PG&E) and San Diego Gas & Electric (SDG&E). Eligible customers are those whose total household income is at or below 175% of the federal poverty guidelines.

## **West Virginia<sup>43</sup>**

Through the Low Income Home Energy Assistance Program (LIHEAP) a 20% Discount Program or the Special Reduced Residential Service Rate Program is operated providing those eligible with a 20% discount from their electric and/or gas company on customer bills. Eligibility is provided for customers 60 years and older who are recipients of either social welfare programs such as SSI, WV Works, or Food Stamps.

---

<sup>43</sup> West Virginia Department of Health and Human Resources, Bureau for Children and Families (WVDHHR). "Family Assistance: Utility Assistance." WVDHHR. July 7, 2005.

## **Wisconsin<sup>44</sup>:**

### Low Income Rate Assistance

The State has a Public Benefits Fund (PBF) financed by utility contributions set up under its 1999 energy reliability plan.<sup>45</sup> Funding for low-income energy portion of the PBF varies each year and comes from 3 sources: prior utility (gas and electric) low-income expenditures (about \$21 million per year), a new access fee or customer charge on all electric bills and the current year's federal LIHEAP and weatherization allocations. A Bill Assistance fund supports customers that have household incomes that are 150% or below the poverty line.

## **Ohio<sup>46</sup>:**

### Percentage of Income Payment Plan (PIPP)

Under Ohio's PIPP, if a customer heats with gas, ten percent of the monthly household income is paid to the gas company and five percent to the electric company. (If your monthly household income is at or below fifty (50%) percent of the Federal Poverty level, most PIPP customers will pay three percent instead of five percent for the secondary source of heat.) If the utility company provides both gas and electric, or if the customer heats with electricity, fifteen (15%) percent of the monthly household income is paid.

---

<sup>44</sup>

<sup>45</sup> According to Alliance to Save Energy, some 26 US states have established such funds for similar purposes. <http://www.ase.org/content/article/detail/2604>

<sup>46</sup> Public Utilities Commission of Ohio (PUCO). "Energy Assistance Programs: Help with Paying Your Utility Bills." PUCO. July 7, 2005.

## Arrearage Crediting Program (PAC)

Customers of Ohio's electric utilities, such as Ohio Edison, who are no longer income eligible for PIPP may enroll in the company's PIPP Arrearage Crediting program (PAC). The PAC program assists with the transition from paying a monthly PIPP payment to paying monthly electric bills in full. This program allows customers to: (a) pay their PIPP amount for the first 12 months after leaving the PIPP program, (b) Pay their full monthly electric bill for the second 12 months, (c) Pay their full monthly electric bill plus a payment toward their PIPP balance (not to exceed \$20) during the third 12 months. Once customers begin paying their current bill plus a payment toward their balance, they will receive a credit equal to the balance payment. The amount of time customers stay in the PAC program is determined by the length of time they were on PIPP plus 24 months.

## Home Energy Assistance Program (HEAP)

HEAP is federally funded and is administered by the Ohio Department of Development (ODOD). It pays a one-time payment for most PUCO-regulated utility customers reflecting their usage for the current winter heating season

## **Canada**

### **New Brunswick**

New Brunswick, like some other provinces such as Alberta and PEI, delivers energy rate assistance to low income citizens through a supplement as part of its general welfare responsibilities. For example, its Fuel

Supplement program<sup>47</sup> is designed for social assistance recipients to help with their winter heating costs. Family and Community Services provides over \$1.5 million in fuel supplements to approx 3000 families on social assistance. Eligibility is done on a case-to-case basis. There is also a \$100 general supplement for low-income seniors (\$3.2 million/yr for 32 000 seniors). In December 2004, the N.B. monthly fuel supplement was increased from \$70 to \$90 and the one time annual payment for a bulk fuel supplement also increased from \$420 to \$540.

## **Newfoundland and Labrador**

The Income Support Program (Provincial Welfare ) provides recipients with a monthly fuel allowance \$45/mth (Labrador) and \$25/mth (Nfld) when heat and electricity are not included in the shelter allowance. With respect to arrears, the Income Support program will assist with a direct payment for electricity, from the individual or family benefit payment, to the Power company once a repayment schedule has been negotiated and formally signed by the recipient<sup>48</sup>.

## **United Kingdom**

### **Winter Fuel Payments (WFP)**

Winter Fuel Payment (WFP) is an annual payment to help people aged 60 and over with their winter heating bills. The payments are made through

---

<sup>47</sup> Belliveau, Marc. ([Marc.Belliveau@gnb.ca](mailto:Marc.Belliveau@gnb.ca)) "Re: Question." E-mail to Elizabeth Kim ([ekim@piac.ca](mailto:ekim@piac.ca)). July 28, 2005.

<sup>48</sup> Cook, Marilyn ([MarilynCook@gov.nl.ca](mailto:MarilynCook@gov.nl.ca)). "Re: Inquiry." E-mail to Elizabeth Kim ([elizabethmaekim@yahoo.ca](mailto:elizabethmaekim@yahoo.ca)). July 27, 2005.



the U.K. Department of Work and Pensions. Eligibility is determined primarily on the basis of age with some exceptions. The WFP pays £200 per year for qualifying households while those 80 years of age and over receive £100 extra. There is also provision for pensioners on Pension Credit to receive an automatic Cold Weather Payment of £8.50 from the Social Fund for each week of very cold weather.<sup>49</sup>

## **Energy Conservation and Demand Management Programs**

These programs are the major area of inquiry of this report. They include programs to provide the physical measures required to induce conservation and the educational component to alter consumer behavior that will create savings. Measures delivered by such programs include energy audits, weatherization services, installation of efficient supply and heating and cooling systems and lighting and appliance upgrades. While the list of programs described in this report is not intended to be an exhaustive canvass of all jurisdictions offering such programs, it does attempt to describe the more significant developments in the field with a view to potential study and adoption in relevant Canadian jurisdictions.

### **United States**

A concise summary of the design, financing and delivery of all programs in the United States designed to remove barriers to access to energy conservation programs is difficult to accomplish. This is because there are

---

<sup>49</sup> Defra et al. (2005) The U.K. Fuel Poverty Strategy: 3<sup>rd</sup> Annual Progress Report 2005. DTI and Defra:

multiple programs offered at multiple levels of authority with different types of financing associated with the various programs notwithstanding the fact that the delivery agent for a suite of programs may be the same.

While there are exceptions to this generalization, it is fair to say that most programs are offered through the vehicles provided by LIHEAP funding, Weatherization Assistance Program, System Benefits Funds or Utility financing.

### LIHEAP

LIHEAP provides 15% of its budget for weatherization and energy conservation programs maintained by the states. The three main components that LIHEAP assists low-income households with their energy issues are (1) bill payment assistance (heating and cooling), (2) energy crisis assistance, and (3) weatherization and energy related home repairs (IndEco 2004: 31). These programs provide improvements of the thermal efficiency of homes by providing installation of weatherization materials such as attic insulation, caulking, weather-stripping, furnace efficiency modifications, and replacement furnaces, boilers and air conditioners.

All low-income households are eligible to receive weatherization assistance. According to federal guidelines, a low-income household is one whose combined income falls at or below 125 percent of the poverty level determined by the federal government.

LIHEAP's involvement in weatherization is extensive: LIHEAP state run weatherization programs provide \$280 million a year; an average of \$2672 of expenditures per home with a estimated savings of \$275 per year (or an average of 31%) for each household. Such programs provide free energy audits and retrofitting services to more than 5.3 million low-income families since 1976. According to the U.S. department of Energy, this program returns \$3.71 in energy and non-energy related benefits, including the creation of 8000 jobs across the country. In addition, State weatherization programs are often supplemented with state funds, church donations and utility subsidizations. Many local utilities have their own weatherization programs that piggyback the federal programs, such as LIHEAP<sup>50</sup>. (A description of some of the program experience in various states may be expositive. For example, in 2004, 1% of LIHEAP funding in Maine went to their Emergency Assistance Program and 32% of LIHEAP funding in Florida and California went to their Emergency Assistance program (IndEco 2004:9).

### **Weatherization Assistance Program (WAP)**

Assisting the low-income population for weatherization, the Department of Energy (DOE) in the United States has been the largest contributor of weatherization funds. In 2004, DOE funded about 40% if the total weatherization investment for the year equating to about \$228 million. It should be noted that the DOE's Low Income Weatherization Assistance Program (DOE LIWAP) is a separate program from the LIHEAP initiatives. There are options to use DOE's rules for LIHEAP funds, however they are

---

<sup>50</sup> Indeco 2004 at footnote p.13

separate in allocation and services. LIHEAP is a program administered by the U.S. Department of Housing and Human Services (HHS) where as DOE LIWAP is administered by the U.S. Department of Energy as much as 25% of LIHEAP funding to the states goes toward weatherization programs. In the 2002 fiscal year, \$201 million was contributed to weatherization from LIHEAP or approximately 36% of its total for the year<sup>51</sup>.

### **System Benefits Funds**

System Benefits Funds are established usually through state legislation to provide a consumption related rate charge to fund such objectives as conservation, low-income assistance energy efficiency and environmentally friendly energy industry practices. Some examples of the operation of such funds are set out below.

### **California**

Each utility must establish a rate to fund energy efficiency and conservation, public interest research, and renewable resource technology programs. The rate is a non-bypassable portion of local distribution service and based on usage. Programs provided to low-income consumers shall be funded at not less than the 1996 authorized level.<sup>52</sup> Each public power system shall assess a non-bypassable charge on distribution service to fund demand-side management, research and development, renewables and/or low-income

---

<sup>51</sup> Energy Efficiency and Renewable Energy (EERE – U.S. Department of Energy). “Weatherization Assistance Program.” Retrieved January 16, 2006.

<sup>52</sup> California Public Code, AB1890, 9/23/96 & SB 477, 8/15/97;

programs. The charge cannot collect less than the lowest expenditure level of the state's three largest investor-owned utilities<sup>53</sup>.

## **Connecticut**

Since January 1, 2000, energy distribution companies collect a systems benefits charge from all end use customers. The charge funds consumer education, hardship protection programs, low income conservation programs, displaced worker protection costs, unfunded storage and disposal costs for spent nuclear fuel, post-retirement safe shutdown and site protection costs, and decommissioning fund contributions.

## **Illinois**

All utilities collect from each customer a monthly charge to be paid into the Low-Income Energy Assistance Fund. Charges range from 40 cents for residential customers to \$300 for large industrial customers<sup>54</sup>. Of note in terms of financing, is the Illinois statute, SB 24, which declared the sale of Commonwealth Edison's generating plants to be in the public interest. In return, the utility was subject to certain requirements, including Commonwealth Edison had to contribute \$250 million to establish an Illinois clean energy community trust to provide financial support for projects that improve energy efficiency, develop renewable energy resources and improve environmental quality<sup>55</sup>.

---

<sup>53</sup> Ibid at (§385.a)

<sup>54</sup> S.B. 362, §85

<sup>55</sup> (§5, amending §16-111.1 and §16-111.2 of the *Public Utilities Act*

## **Texas**

Utilities finance a system benefit fund with a non-bypassable per KWH charge. Among the fund's purposes is a 10% rate reduction for low-income customers.<sup>56</sup> All customers must have access to energy efficiency alternatives.<sup>57</sup> The Texas Public Utilities Commission administers the System Benefit Fund.

### **Utility Financed Programs**

There may also be programs for low income or special needs conservation management programs that are funded as part of the revenue requirement of the utility and passed on in rates to customers in accordance with the approved cost allocation. These measures may also attract financial incentives for performance on the part of the utility. The Massachusetts Keyspan program cited below is an example of the same.

### **U.S. Program Examples**

By means of these four main types of operational funding methods (LIHEAP, WAP, Public Benefits, and Utility-financed), there have been numerous programs undertaken to remove barriers to access to conservation programs throughout the United States. The following examples are

---

<sup>56</sup> SB 7, 6/18/99, §39.903

<sup>57</sup> Ibid at §39.905

## **California**

### Low-Income Energy Efficiency (LIEE) Program

The services provided by California utilities under this program include attic insulation, energy efficient refrigerators, energy efficient furnaces, weather-stripping, caulking, low-flow showerheads, water heater blankets, and door and building envelope repairs that reduce air infiltration. Eligibility for receipt of program services is established if applicant is age 59 years and younger with a household income of 175 % of or under Federal Poverty Guidelines (FPG) or 60 years+, or a disabled head of household, with a household income 200% or less of FPG.

In 2004, the LIEE program provided over 48,000 California households with over \$49 million of weatherization assistance. This generated an estimated savings of over 270 million KWH of electricity and approximately 9.8 million therms of natural gas over the life of the measures.

### California LIHEAP

Federal support through LIHEAP for all energy programs in California, including rate assistance is \$89 million in 2006. Municipal agencies or departments generally administer the Federal Low Income Household Energy Assistance Program (LIHEAP) that provides low-income households with energy bill payment assistance. Most clients are referred for weatherization work to reduce subsequent bills.

Such assistance may also be provided in cases where the applicant is on medical baseline or life support. Customers dependent on life-support

equipment and those with special heating or cooling needs, with a doctor's certificate, may be eligible to receive a standard medical baseline quantity of approximately 500-kilowatt hours (kwh) of electricity and/or 25 therms of gas per month at the lowest price, in addition to standard baseline quantities.

## **Massachusetts**

KeySpan Energy Delivery is a subsidiary company of KeySpan Corporation that is the fifth largest distributor of natural gas in the United States and the largest in the Northeast, operating regulated gas utilities in New York, Massachusetts, and New Hampshire that serve 2.6 million customers.<sup>58</sup>

The KeySpan Energy Delivery efficiency program provides free weatherization services to eligible homeowners and renters. In addition to an energy audit, the services include:(1) ceiling insulation, (2) door weather stripping, (3) caulking, (4) switch and outlet gaskets and covers, (5) pipe insulation, (6) faucet aerators and, (6) minor repairs to exterior windows and doors<sup>59</sup>. The funding arises in the context of its utility operations and is reflected in its revenue requirement.

## **Philadelphia, Pennsylvania**

In Philadelphia the Energy Coordinating Agency (ECA) administers the Weatherization Assistance Program. The ECA is a non profit community based organization funded by multiple government and utility stakeholders with ten neighborhood centres delivering its programs in the Philadelphia

---

<sup>58</sup> [http://www.corporate-ir.net/ireye/ir\\_site.zhtml?ticker=cpst&script=410&layout=7&item\\_id=734211](http://www.corporate-ir.net/ireye/ir_site.zhtml?ticker=cpst&script=410&layout=7&item_id=734211)

<sup>59</sup> IndEco Strategic Consulting Inc. *Low Income Energy Conservation and Assistance*. Toronto, Ontario: IndEco Strategic Consulting Inc. 2004.



area. This program includes heating, water heating and electricity conservation provisions. Other conservation programs associated with weatherization initiatives include the Energy conservation, Education & Related Repair Services, the Conservation Works Program, the Water Conservation Program, Cool Homes, Energy Education, the Heater Hotline, Energy Efficiency Codes and Budget/Energy Counseling and Bill Payment Assistance<sup>60</sup>. Close to 30,000 households were served by low income conservation programs administered by ECA in 2003.

## **New York**

The New York State Division of Housing and Community Renewal administers the federal Weatherization Assistance Program (WAP) within New York. The Weatherization Assistance Program (WAP) is federally authorized and funded through the United States Department of Energy (USDOE) and the Department of Health and Human Services (DHHS) through a sub allocation from the NYS Office of Temporary and Disability Assistance. In New York, the program provides services to people with household incomes below 60% of the State Median Income, who reside in either single-family homes or multifamily buildings.

The New York Energy \$mart program is based on energy efficiency models to improve the conservation of energy in households that are not eligible for WAP<sup>61</sup>. It is funded through a public benefits charge upon state electricity consumption. There is further funding and measures available for eligible

---

<sup>60</sup> Energy Coordinating Agency (ECA). "Low Income Services." Retrieved January 20, 2006.

<sup>61</sup> LIHEAP Clearinghouse, U.S. Department of Health and Human Services, Administration for Children and Families. "New York." Retrieved January 20, 2006.

homeowners or renters through the Weatherization Network. Initiative to reduce the consumption of electricity Such measures include energy-efficient hardwired lighting fixtures, compact fluorescent lighting, refrigerators, domestic hot water conversion from electric to gas, health, safety and other cost-effective electric reduction measures<sup>62</sup>.

In the 2002 fiscal year, publicly owned utility companies funded over \$120 million to the weatherization programs in the US, which currently accounts for more than 20% of all the funding available for such initiatives<sup>63</sup>.

## **United Kingdom**

The overall structure of the U.K. government plan to eliminate fuel poverty can be most effectively discussed in terms of those features and programs that are available throughout the U.K. and those that are specific to England and the devolved administrations. The United Kingdom programs have the involvement of the Office of Gas and Electricity Markets (ofgem) that regulates the gas and electricity markets in the U.K. Ofgem's first priority is the protection of consumers.

### **Warm-a-life Plan (Scottish Gas and British Gas 2002)**

Funded through Scottish and British Gas, the Warm-a-Life plan provides free insulation, and discounting fuel bills in Scotland, England and Wales. The plan provides a "benefits health check" that can result in an average

---

<sup>62</sup> New York. "The Weatherization Network Initiative (WNI)." Retrieved January 20, 2006.

<sup>63</sup> Energy Efficiency and Renewable Energy (EERE – U.S. Department of Energy). "Weatherization Assistance Program." Retrieved January 16, 2006.

potential annual increase in household income £900 as a result of free benefits health check that notifies customers of available programs to reduce their energy bills. In addition, the program enables basic bank accounts for household bills to be paid in cash at one of 7400 Pay Points nation wide. The results over a two year period (2003-2003) were <sup>64</sup> :

- 328 GWh of energy saved
- 9602 bill discounts were awarded
- 7642 households benefited
- 10617 measures were provided
  - 5556 Cavity wall insulation
  - 3885 loft insulation
  - 355 draft proofing
  - 821 hot water tank jackets

### The Energy Efficiency Commitment

The Energy Efficiency Commitment (EEC) comes about through Ofgem action as it establishes established energy efficiency obligations for certain gas suppliers and electricity suppliers by way of an Ofgem Order. The Order provides an incentive to suppliers to achieve improvements in energy efficiency by way, in part, of innovative actions. The incentive is the accreditation of additional improvements in energy efficiency to count towards the supplier's energy efficiency target (established for it by the Authority under the Order). An Order is currently in place for the period 1 April 2005 to 31 March 2008. The previous order of 2002-2005 resulted in

---

<sup>64</sup> [http://www.centrica.co.uk/files/pdf/EESop\\_Annual\\_Report\\_2002.pdf](http://www.centrica.co.uk/files/pdf/EESop_Annual_Report_2002.pdf)

total customer savings of around £350 million per year, £175 million of which were made in low income households. This equates to an average saving of £35 per household per year.

It is important to note that the benefits not universal to all customers of utilities regulated by Ofgem in that not all customers will have received benefits from the EEC. However, around 10 million British households, 6 million of which are low-income, have benefited from energy saving measures over the last 3 years. These measures include insulation, energy-efficient boilers and energy saving light bulbs . Over 1 million households benefited from insulation measures such as cavity wall insulation and loft insulation. The take up of the measures has been brisk; more than 300 000 energy-efficient boilers have been installed, 6.5 million subsidized, energy-efficient household appliances put in service, and 40 million energy efficient light-bulbs were supplied to customers.

The benefits in aggregate have been impressive. There has been an estimated 1% reduction in total domestic carbon emissions. The overall target for the first phase of reduction of 62 terawatt hours of consumption was exceeded by the suppliers saving 86 TWh. The excess will be carried over into the second phase that sets them the challenge of saving 130 TWh of energy.

Community Energy Program provides grants to support the installation and refurbishment of community energy systems across the U.K. Since 2002,

about 22 750 fuel poor individuals (over 9800 fuel poor households) have been connected to community heating projects under this program<sup>65</sup>.

### Energy Efficiency Partnership for Homes

The Energy Efficiency Partnership for Homes is a network of over 395 organizations from the public, private and voluntary sectors. The aim of the Energy Efficiency Partnership for Homes (the Partnership) is to achieve energy efficiency in homes and alleviate fuel poverty through engaging cooperation and collaboration within the supply chain for energy efficient products and services. The Partnership has a comprehensive footprint within all relevant industry and social sectors and provides an effective mechanism for cross-sector cooperation and joint delivery of energy efficiency initiatives.

Members of the Energy Efficiency Partnership for Homes work together by sharing information and undertaking joint projects to:

- Achieve more effective marketing and delivery of energy efficiency in homes.
- Discuss, inform and influence public policy relating to domestic energy efficiency and fuel poverty as well as securing long-term government support for all involved in the UK domestic energy efficiency market.
- Drive more rapid and effective development of national standards for energy efficiency and quality control, such as the Partnership's

---

<sup>65</sup> Defra et al. (2005) The U.K. Fuel Poverty Strategy: 3<sup>rd</sup> Annual Progress Report 2005. DTI and Defra:

successful role in extending the Energy Efficiency Recommended label to new products.

- Encourage industry best practice - among companies and organizations developing and selling energy efficient products, or those running schemes to tackle fuel poverty or giving energy efficiency advice.<sup>66</sup>

While the program receives funding from Defra, and is under the auspices of the U.K. Public Health Association<sup>67</sup>, it is also facilitated by the Energy Savings Trust. The Energy Savings Trust is a non-profit independent corporation funded by government and private industry with governing members drawn from government and large industry stakeholders. It is dedicated to sustainable energy and lower emission climate change goals. The program undertakes investigations<sup>68</sup> concerning the prevalence and distribution of fuel poverty within system built or prefabricated homes and performs research into the application of heat pump technologies to hard-to-treat fuel poor households.

#### Energy Saving Trust's Local Authority Support Programme (LASP)

This program funded by Defra and the Energy Saving Trust provides support for the development and delivery of strategies to improve the energy efficiency of housing and to promote sustainable energy use. To date, over 33 000 fuel poor households have been assisted through LASP projects.

---

<sup>66</sup> <http://www.est.org.uk/partnership/about/>

<sup>67</sup> Defra et al. (2005) The U.K. Fuel Poverty Strategy: 3<sup>rd</sup> Annual Progress Report 2005. DTI and Defra:

<sup>68</sup> Defra et al. (2005) The U.K. Fuel Poverty Strategy: 3<sup>rd</sup> Annual Progress Report 2005. DTI and Defra:

## Home Improvement Agencies (HIAs)

Home Improvement Agencies are small, locally based not-for-profit organisations. They help homeowners and private sector tenants who are older, disabled or on low income to repair, improve, maintain or adapt their homes. They provide people-centred, cost effective assistance, and help to tackle poor or unsuitable housing, enabling clients to remain in their own home, safe, secure, warm and independent. HIAs currently operate in over 300 local authority areas and are funded by those authorities<sup>69</sup>. They are sometimes referred to as 'Care & Repair' agencies or 'Staying Put' schemes.

## Warm Zones

Warm Zones, actually Warm Zones Limited (operated by National Energy Action, the leading fuel poverty charity and other partners) was set up with Government help to manage the 'pathfinder' Zones. Warm Zones aimed to identify all households that need help (in particular the vulnerable and fuel poor) in a given area and give them all available help in a concentrated, cost-effective way. Much of the work to deal with fuel poverty is about installing measures - thermal insulation, draught proofing and heating to improve comfort in the home. At the same time, sound advice on energy efficiency and benefits entitlement can help to reduce the amount spent on energy and maximize household income. There were 5 original zones created to assess the benefits and possibilities of a systematic local approach to identifying and assisting fuel poor households. The program was funded with monies

---

<sup>69</sup> Defra et al. (2005) The U.K. Fuel Poverty Strategy: 3<sup>rd</sup> Annual Progress Report 2005. DTI and Defra:

from local authorities, European Union agencies, energy companies and other supporters. The program ended in 2004<sup>70</sup>.

## **England**

The Fuel Poverty eradication plan referenced elsewhere in this report has as its major stakeholders, the Department of the Environment, food and Rural Affairs (DEFRA), the Fuel Poverty Advisory Group (a government funded public advisory commission) as well as the British utilities , PowerGen, British Gas, and Transco. The overall goal is to end fuel poverty in vulnerable households by 2010. Some of the program's tools are as follows:

### **Warm Front Grant**

This grant enabled over 1 million households to receive assistance from June 2000 – March 2005<sup>71</sup>. It was originally introduced in 2000 and amended in June 2005 to include central heating for all clients and oil central heating for those not on the gas distribution network (the Warm Front Team 2005). Some of the features of the Warm Front Grant include the following:

- A package of energy efficiency and heating measures up to the value of £2700 (except where oil central heating is installed or repaired where a maximum grant of £4000 is available) (the Warm Front Team 2005)
- Availability to homeowners or renters from a private landlord

---

<sup>70</sup> Defra et al. (2005) The U.K. Fuel Poverty Strategy: 3<sup>rd</sup> Annual Progress Report 2005. DTI and Defra:

<sup>71</sup> Defra et al. (2005) The U.K. Fuel Poverty Strategy: 3<sup>rd</sup> Annual Progress Report 2005. DTI and Defra:



Eligibility for the program includes householders aged 60 or over and householders who have a child under 16 or are pregnant and are in receipt of specified public assistance benefits. Other householders may qualify on the basis of their receipt of ability or income related benefits including tax credits.

## **Scotland**

As part of the program to eradicate fuel poverty , the Scottish initiatives have as their participating stakeholders including the devolved administration government (Scottish Executive) municipal councils, a national energy charity (Energy Action Scotland as well as the main Scottish utilities (Transco, Scottish Power, Scottish and Southern Energy). Some of the programs delivered are described below.

### **Central Heating Program**

The objective is to ensure that all social sector housing and vulnerable private sector households receive free central heating by 2006. The program has installed central heating systems to over 52 000 homes.

The program boasts considerable success in reducing the annual average fuel bill £35, when in conjunction with the Warm Deal insulation measures, energy efficiency advice and a Benefit Entitlement cheque. In the first year of this program, out of the number of people who were considered fuel poor,

9 out of 10 were lifted out of fuel poverty after receiving the measures of this program<sup>72</sup>.

Warm Deal Programme (also known as the Scottish Warm Homes Grant)  
The eligibility for the program is determined by receipt of ability or income-related government benefits. Up to 2005, this program has insulated over 200 000 homes, nearly 10% of Scotland's housing stock. Average reductions in annual fuel bills range from £99 for tenants of private landlords to £26 for tenants of housing associations<sup>73</sup>. This has been done primarily through insulation grants of up to £500 (if the work costs more than £500, then the consumer will have to pay the difference, however this is discussed before the work has been done)<sup>74</sup>. Grants will cover cavity wall insulation, loft, tank and pipe insulation, draught proofing and four energy efficient light bulbs.

## **Canada**

### **Quebec<sup>75</sup>**

In part as a response to a 1994, Option Consommateurs study on Low income energy efficiency programs, the government of Quebec launched a commission giving rise to a pilot program in Quebec launched in 1999. The program includes:

---

<sup>72</sup> Defra et al. (2005) The U.K. Fuel Poverty Strategy: 3<sup>rd</sup> Annual Progress Report 2005. DTI and Defra:

<sup>73</sup> Defra et al. (2005) The U.K. Fuel Poverty Strategy: 3<sup>rd</sup> Annual Progress Report 2005. DTI and Defra:

<sup>74</sup> Eaga Partnership Scotland. "Warm Deal: A Guide to the Scottish Executive's Warm Deal Scheme." Eaga. September 12, 2005a.

<sup>75</sup> Equiterre. Annual Report 2004. Montreal: Equiterre, 2004. July 28, 2005.

- 1.5 hour visit from a technician and educator
- caulking, water saving, door and window adjustments
- education includes the analysis of energy bill, and an action plan for mostly heat and water

By 2004, this program had increased to serve 15 Quebec regions (instead of the initial 8). Electronic thermostats have been installed, and the investment per household has increased from \$250 to \$280 (excluding thermostats). The funding for the program comes from Gaz metropolitain and Hydro-Quebec.

The reported results include an estimate of 5-10% energy saved through lower consumption. The average savings in aggregate are double the cost of the program – savings conservatively projected to last between 5 years to a lifetime. Other spin off benefits include the an estimated 18 jobs created per million dollar spent. This figure for conservation related activities contrasts with an estimated 11 jobs for producer related hydro projects. In addition, 9% of the program participants contacted another service or group because of a referral (i.e. a health clinic). This program is being applied in Quebec City, Shawinigan and Sherbrooke<sup>76</sup>.

Equiterre is certified by the Office of Energy Efficiency (Canada) and by the Agence de l'efficacite energetique (Quebec) to offer EnerGuide service for homes. Equiterre is a non-profit global organization dedicated to building a citizens' movement by promoting individual and collective choices that are

---

<sup>76</sup> Canadian Mortgage and Housing Corporation (CMHC). "Improving Quality and Affordability: Energy-Cost Saving Program for Low-Income Households – Montreal, Quebec." July 28, 2005a.

both environmentally and socially responsible. According to the annual report of 2004 from Equiterre (p12), Equiterre representatives:

- Directly visited 1050 homes for house call services in 2004 and contacted nearly 2100 people
- Conducted 611 two-hour visits to low-income households. This was to increase awareness about the importance of saving energy and water.
- Provided 430 households with an energy audit, according to EnerGuide homes guidelines
- Attended at 9 homes to present “Intervention and Training in Energy Efficiency” launched in November 2004
- Helped raise public awareness concerning energy efficiency through interviews with the media, workshops and conferences

## **Alberta**

There is a furnace rebate program started on July 4, 2005. This is sponsored by Climate Change Central, the Alberta Government and Natural Resources Canada. Homeowners can apply for up to \$300 for replacing an older furnace with and ENERGY STAR qualified high-efficiency gas furnace or boiler. Funds are limited and will be distributed on a first come first serve basis<sup>77</sup>.

---

<sup>77</sup> Energy Solutions Alberta. “Furnace Programs Reheats Province.” July 15, 2005.

## **Ontario**

While the results are a matter of some dispute, there is likely no Canadian jurisdiction that has committed itself so publicly to a conservation agenda<sup>78</sup>. The Conservation Action Team was established by the Ontario government in January 2004 with a mandate to seek out the best conservation ideas and practices, and promote conservation through outreach to energy sector stakeholders and the citizens of Ontario. In its 2005 report<sup>79</sup>, following extensive stakeholder consultation it recommended that the government:

Build on partnership projects and new federal government initiatives to mitigate the impact of rising energy prices through concentrated efforts with social housing and low-income people not living in social housing, with specific attention to electrically heated homes.

### **With reference to low income consumers, the Conservation Action Team proposed some specific resolutions for Government policy:**

**Be** it resolved that the Government of Ontario support an energy efficiency program for low income energy users which would help the Province achieve its goals for conservation and reduced energy use while at the same time serving to alleviate the disproportionate energy cost burden faced by Ontario residents of lower income. Energy efficiency measures that would receive financial support would include, but are not limited to, weatherization (retrofitting),

---

<sup>78</sup> The execution of the agenda has been the subject of some criticism . See the Pembina Report referenced at footnote

<sup>79</sup> [http://www.energy.gov.on.ca/index.cfm?fuseaction=conservation.actionteam\\_report2005](http://www.energy.gov.on.ca/index.cfm?fuseaction=conservation.actionteam_report2005)

furnace replacement and light bulb replacement and smart metering (including retrofitting) of properties occupied by low-income consumers; and

Be it further resolved that the Government of Ontario enact regulations that ensure that all new housing, including rental units, and retro-fit projects meet exacting energy conservation targets for the building as well as for furnaces and other electricity using appliances in the building and that smart meters are required in all new units, including units in multi-unit buildings; and

Be it further resolved that the Government of Ontario work with suppliers of housing for low income tenants to measures are undertaken to reduce energy use in existing units.

### Social Housing Energy Management Program

This has been billed as the first coordinated energy management initiative for social housing in Canada. It helps social housing landlords identify energy saving opportunities and fund energy management solutions in their buildings. Brings together social housing project with utility companies, government agencies and energy management experts. It also provides tools and education to help both landlords and tenants reduce their energy use<sup>80</sup>.

---

<sup>80</sup> Social Housing Services Corporation (SHSC). "For Immediate Release: Major urban Electricity Utilities Help Social Housing Keep Energy Costs Affordable, Toronto, June 6, 2005." August 5, 2005.

Working in partnership with the Social Housing Services Corporation (SHSC), Hydro One (the Ontario owned electricity transmission and distribution company) will contribute up to \$1.5 million over three years to help landlords of social housing properties served by Hydro One become more energy efficient and reduce electricity consumption. This initiative is one of several being undertaken by Hydro One as part of a multi-faceted 3-year conservation and demand management program.

SHSC will administer the incentive funding available from Hydro One as part of its integrated Energy Management Program Pilot for social housing landlords. Eligible social housing landlords may apply to SHSC for a grant of up to \$500 per housing unit to undertake energy audits and energy-efficiency improvements. SHSC will report to Hydro One the kilowatt-hour energy savings achieved by all retrofit projects funded under this initiative.

#### PowerWISE:

In 2004, the Ontario Minister of Energy determined that electric local distribution companies (LDCs) would be allowed to charge customers the full amount of their allowed market adjusted rate of return (they had previously been restrained from charging the full amount) if that additional rates money was used for conservation programs. This spurred action on the part of the LDCs to bring forward programs to address CDM initiatives. One of those was the powerWISE program of Enersource Hydro Mississauga, Hamilton Utilities Corporation, Hydro Ottawa Limited, PowerStream Inc., Toronto Hydro-Electric Systems Limited and Veridian Connections. These companies will invest a combined \$70 million over three years on conservation and electricity demand management programs. In total, the six

utilities represent 1.65 million customers or approximately 40 percent of the electricity customers in Ontario.

One of the multi-year powerWISE initiatives promotes energy conservation in social housing buildings in Ontario. Funding of \$50 000 from the participating utilities will help pay for the first step – energy audits of 1 000 units in 6 social housing buildings from Hamilton, Mississauga, York Region and Ottawa. The audits will identify all possible ways to reduce energy – including switching light bulbs to installing a new furnace<sup>81</sup>.

In 2004, Indeco Consultants and a coalition of community and environmental groups formed as the Low Income Energy Network issued a report that contained a practical set of initiatives (many described in this report) to jump start a Low Income conservation program . The following were the general recommendations on the content of the program.

- 10) The focus should be on savings associated with energy for the safe preparation of food, home heating and cooling (for vulnerable groups)
- 11) The plan should meet immediate needs of low-income and at the same time produce long term (but based on preventative measures)
- 12) Prior to program implementation, the overall strategic program planning should be negotiated with low income and advocacy groups
- 13) Clear and simple screening process for identifying program participants

---

<sup>81</sup> Social Housing Services Corporation (SHSC). “For Immediate Release: Major urban Electricity Utilities Help Social Housing Keep Energy Costs Affordable, Toronto, June 6, 2005.” August 5, 2005.



- 14) All low-income households need to be included (including renters)
- 15) The program funds should not come out of other subsidies or financial support given to participants
- 16) Upfront cost to participants will not be required for energy efficiency upgrade programs
- 17) Energy efficiency and conservation programs should address the following components:
  - a. Appliances
  - b. Envelopes
  - c. Heating
  - d. Cooling
- 18) Delivery of programs should be done by local community groups with experiences in delivering energy efficient programs

## Enbridge Gas Distribution Company Demand Side Management

Enbridge Gas Distribution Company, a local distribution company serving customers in Ontario operates a portfolio of demand side management programs design to promote the efficient use of energy and reduce consumption. Its programs are subject to approval for inclusion in rates by the Ontario Energy Board.<sup>82</sup> One of its program portfolios –the

---

<sup>82</sup> Union Gas Limited the other major local gas distribution utility maintains similar programs subject to scrutiny by the OEB. Enbridge has reported to the Board that “Over the past decade Enbridge’s programs have delivered approximately 1.8 billion m3 of natural gas savings (equivalent to natural gas use by approximately 620,000 homes per year) and net energy savings for customers of approximately \$865 million. Associated avoided CO2 emissions are approximately 3.4 million tonnes. This is roughly equivalent to removing 890,000 cars from Ontario’s roads”. According to Enbridge’s Strategic Plan Over the period 2006 to 2008, Enbridge intends to invest approximately \$65 million in energy conservation

Low Income Program (Market Transformation and Existing Program) is designed to address the particular barriers faced by low income customers over the next three years.

The program is supported by an education and community outreach strategy that will include partnership opportunities with low income community and environmental advocacy groups will be pursued. In this way, Enbridge will attempt to validate program design components, including ethnic considerations. Joint program and co-funding opportunities with electric utilities and government will also be pursued to optimize energy savings both to the low income customer and the program sponsor(s).

Existing DSM residential programs will be adapted and made more accessible to the low income customers. The TAPS Partners program involves installation of the following:

- up to two low-flow showerheads;
- foam pipe insulation leading to and from the hot water heater; and
- kitchen and bathroom aerators that are left for customers to install themselves.

The Enhanced TAPS Program with a programmable thermostat, electric utility provided compact fluorescent light bulbs, and other easy installation measures will be utilized as a basic program that will allow low income customers to immediately realize energy savings. From the

---

based activities on behalf of its customers. For this investment, Enbridge is projecting natural gas savings of approximately 260 Million m<sup>3</sup>.

Company's perspective, the program will provide near term energy volume reductions especially when delivered in conjunction with a focused education outreach program.

Enbridge also committed to making available to low income customers the “extended program” referenced in the 2004 INDECO/ LIEN report referenced above at p. herein. The program will offer equipment replacement/conversion, including water and space heating equipment, based on a pre-defined customer screening criteria used by a social service agency with experience in administering service programs to low income customers.

Enbridge estimates the potential impact of a fuel conversion program in this package to be significant given estimates that 36% of low income customers in Ontario use electric hot water heaters compared to 8.6% in the Enbridge franchise area. If just 10% of those low-income residents switched to gas, they would save money on their heating bills and the province would save 7.5 MW of electricity annually.

#### Ontario Power Authority - Conservation Bureau Programs

As part of its reform of the electricity sector, the Ontario government set up the Ontario Power Authority (OPA) including in its mandate the operation of a conservation bureau. In October 2005, a ministerial directive, instructed the OPA to achieve 100 MW in saving from low income and social housing customers.

The OPA intends to deliver low income programs for social housing, private multi residential rental, and private homeowners. For the three programs, the Conservation Bureau will spend \$15 million per year over five years on program costs (for a total of \$75 million). The Conservation Bureau will also contribute another \$32 million per year over five years (\$160 million over the life of the programs) to a revolving loan fund. For all of the programs, another \$78 million per year over five years will be leveraged from other sources of financing. . This includes continuing to leverage electric LDC funding, cooperation and assistance through LDC social housing CDM programs. These expenditures will result in an energy demand reduction, over the life of all three programs, of approximately 100 MW. The Conservation Bureau has endorsed a model proposed by the INDECO consultants whose 2004 Report was referenced at page of this report. A brief review of the proposed programs is instructive.

### Social Housing Component

The program will consist of two main streams - a Retrofit Program for existing social housing and a New Construction Program for new social housing units. It will operate in tandem with the Social Housing Energy Management Program described above. Social housing service providers pay on average 40% of their budgets to utilities, of which electricity comprises a major component. This component of the Conservation Bureau's program envisions a reduction of some 60 MW arising from retrofits involving 50% of all of the social housing units in Ontario and the construction of some 500 units of new social housing.

The particular elements of each can be described. The Retrofit Program will include building audits to identify energy retrofit opportunities, resource acquisition and implementation of cost effective energy efficiency measures, energy conservation education for social housing providers and residents, and progressive energy technology demonstration projects. Of particular interest in the consideration of efforts to reduce non-financial barriers to participation is the proposed education plans:

The social housing and co-op residents will receive energy conservation education in a group setting. This group will include all the tenants of a building or buildings run by the housing provider. Residents will also be offered one-on-one energy conservation in their unit. Residents can receive this education by signing up at the group meeting. At the group and one-on-one education sessions the residents will receive information on the energy conservation measures that were installed in their unit and building and about no-cost energy conservation actions that they can undertake. Examples of no-cost behavioural energy conservation measures include: closing/opening blinds on summer/winter days, vacuuming refrigerator coils, washing clothes in cold water and matching pots and element size on the stove. The housing provider and its Board will also receive education on the energy conservation measures that were installed in the building and about no-cost energy conservation actions that they can

undertake throughout their building or buildings.<sup>83</sup>

The New Construction program will include funding to enable new social housing units to be constructed to a level that significantly exceeds current energy efficiency standards and undertaking distributed generation demonstration projects

Funding for the education and the progressive energy technology demonstration components of the Retrofit Program will be provided by the Conservation Bureau. Housing providers will be eligible for financing to cover the costs of the building audits and retrofits. There will be no capital outlay required by housing providers or renters.

### Low Income Rental

A package of measures financed by a revolving fund of \$7 million per year for 5 years. The Conservation Bureau. will provide up to 20% of retrofit project financing to building owners/managers through a no-interest loan. The building owners/managers will be responsible for securing the remaining financing required for the projects. The repayment of the provincial loan will start 5 years after the loan is granted and repayment will take place over a 10 year period. The Bureau has a target of retrofitting 60,000 units and anticipates a 20% reduction in energy use per unit that is estimated to be able to generate 30 MW of savings.

---

<sup>83</sup> “Low Income Program Concepts for the Conservation Bureau” filed as **Exhibit B, Tab 2, Schedule 3.1, Attachment 1** in OEB proceeding , EB 2005-0489

The program features an education component for renters and building/owners and managers. It will also provide follow-up and monitoring to assist in program take-up

As the Bureau notes:

“The majority of tenants do not pay directly for electricity (it is included in their rent). As such, this program will not directly lead to reduced energy costs for low-income renters in this situation - the savings will accrue to the building owner or property manager that pays the electricity bills. During detailed program design, consideration should be given to how some of the benefits from energy efficiency upgrades in bulk-metered buildings could be passed on to low-income tenants, in order to reduce their energy burden.”

#### Low Income Homeowner

The proposed program will feature home energy assessments, installation of energy saving measures and education. At a cost of \$ 8 million per year for a three year period, the program has a target of 20,000 low-income households in Ontario. To qualify for the program, participants must have an income, which is at or below Statistics Canada's pre-tax, post-transfer Low-income Cut-off (LICO) and must be a homeowner. The recommended qualification process is one of self certification.

The program follows the framework of “basic” and “extended” measures

described earlier in this report. The latter category includes replacement of energy inefficient appliances and installation of low flow toilets and ventilation measures.

The program is based on an estimated 20% energy reduction for 21,000 homes producing an estimated 15MW in savings. The program is designed to be effected without capital outlay by the homeowner and to effect a positive change to the quality of life. The terms of the program provide that the financial provision of energy efficient measures not be considered income by the province.

The Retrofit Program will aim to reach approximately 50% of all existing social housing units in Ontario over a five year period. The New Construction program will initially target the 500 units being constructed through the Ministry of Municipal Affairs and Housing's Strong Start Program.

## **Saskatchewan**

HomeFirst initiative is a 5 year Saskatchewan government- financed plan to develop new affordable housing and in renovation grants for low to moderate-income households. The plan proposes the investment \$200 million over that period and will directly benefit more than 17000 households annually.

HomeFirst was developed by partners at the community level and in the private sector and targets populations low to moderate income families,



seniors, First Nations and Metis People, persons with special needs and those living in the North. Over the next 5 years<sup>84</sup>: 3000 homes will be repaired and made more energy efficient . The program's objective is to improved energy efficiency in new and repaired government assisted housing to promote a greener environment and fewer costs for residents . In particular, through Sask Housing, energy consumption among senior social housing and the other initiative is to be incented by way of a \$1500 energy efficiency grant under the Neighbourhood Home Ownership program<sup>85</sup>.

## **Nova Scotia**

The Nova Keep the Heat program, administered by Service Nova Scotia and Municipal Relations<sup>86</sup> offered a program to all customers that consisted of a one-time rebate cheque, a coupon for a furnace tune-up, and a chance to win an energy savings kit.

Nova Scotia's newly developed natural gas industry has a Natural Gas Equipment Rebate Program (Heritage Gas 2005).If there is natural gas service available nearby, those households who would like to convert to the high efficiency natural gas equipment may be eligible for this program with a maximum overall rebate per household/business is \$1400.Purchased or lease-to-own equipment qualifies for the rebate.

---

<sup>84</sup> Canadian Housing and Renewal Association (CHRA). "Below is a very interesting update provided by Michael Shapcott." Newsletter/e-mail list-serve. June 2005c.

<sup>85</sup> Sieber, Ray ([rsieber@dcre.gov.sk.ca](mailto:rsieber@dcre.gov.sk.ca)) "Energy Efficiency for Low Income Households" E-mail to Elizabeth Kim ([elizabethmaekim@yahoo.ca](mailto:elizabethmaekim@yahoo.ca)). July 28, 2005.

<sup>86</sup> Nova Scotia, Department of Energy. "Financial Assistance Programs." July 28, 2005.

## **Manitoba**

### **W.I.S.E.**

Manitoba Hydro and the Manitoba Society of Seniors (MSOS) joined to help seniors save on energy costs through the Wisdom in Saving Energy (W.I.S.E.) home program<sup>87</sup>. To be eligible for the program, you must be 55 years and over, a home owner and a Manitoba Hydro customer. Participants receive: in-home energy checkup provided by a trained student advisor (between May and Aug) to verify information about furnace, hot water tank, windows and thermostat; to install some energy saving devices; assess energy use in the home; energy information booklets; a gift bag of energy saving devices. Detailed reports with suggestions are sent to the homeowner.

### **Power Smart Residential Loan<sup>88</sup>**

Manitoba Hydro customers can borrow up to \$5000 per residence to finance energy efficient home renovations that include adding insulation, installing ventilation, sealing air leaks, replacing windows and doors, lighting, electrical service and wiring, and upgrades on furnace or water heaters. There is no down payment, maximum term is 60 months, minimum payment is \$15/mth and the annual interest rate is fixed at 6.5% (O.A.C.)

### **Consumer Protection Programs**

---

<sup>87</sup> Manitoba Hydro. "Saving with Power Smart, Power Smart for Your Home: Wisdom in Saving Energy, W.I.S.E. Home Program for Seniors." Manitoba Hydro. July 20, 2005b.

<sup>88</sup> Manitoba Hydro. "Saving with Power Smart, Power Smart for Your Home: Power Smart Residential Loan." July 20, 2005 c.

These programs include measures that may work in tandem with other programs discussed earlier in this report in the emergency programs section that prevent catastrophe in individual households . Prominent among them are no cutoff policies based on vulnerability criteria such as medical condition, age or external temperature. Equal billing plans also provide a measure of stability for financially pressed consumers.

Other measures assist in making sure that customers who are attempting to be engaged in energy conservation practices get value for their efforts. These include the maintenance and enforcement of energy efficiency standards for products and services subject to oversight from various levels of government. While clearly, the ambit of such protection may extend to such measures as municipal property and zoning standards, this report will not exhaustively catalogue every such measure. As well, it should be noted that a comprehensive analysis of the research, formulation and implementation of these types of measures and standards is well beyond the scope of this report. However, these kinds of measures, although they are not exclusively directed at the low income or specially disadvantaged market have an important role to play in preventing the customer from falling through the cracks before other conservation bill reduction programs can assist. As well, the raising of building and product standards, or enhancements to energy service delivery creates “a tide that raises all boats” and ultimately provides benefits to disadvantaged consumers. We have listed below some examples of such measures.

## **Massachusetts**

The Utility Shutoff Protection Plan acts to avert crises caused by disconnections. It is legislated in the laws of Massachusetts that prevent each utility company from shutting off services to people in specific situations who meet certain eligibility criteria. Eligible participants include seniors' households (65 years or older), low-income families with infants (less than 12 months old), people with serious illnesses who cannot pay their utilities, and low-income people who would be without heat between November 15<sup>th</sup> to March 15<sup>th</sup>.<sup>89</sup>

This Plan also includes strict guidelines that limit the utility companies' methods of shut off. In order to terminate service to a household for non-payment, the payments are not due until 45 days after receiving the initial bill, and then there are notices sent out no sooner than 27 days after sending the first bill and another sent out after 45 days<sup>90</sup>. After these notices, the company is required to send a final termination warning 72 hours before the termination.

## **Michigan**

State regulations provide a Winter Protection Plan to prevent utility shutoff for low income (less than 200% Federal Poverty Guidelines) and the elderly 65 years or older. Customer must be enrolled in a utility payment plan.

---

<sup>89</sup> MassResources.org. "Utility Shutoff Protection: An Overview." Retrieved January 10, 2006

<sup>90</sup> Office of Massachusetts Attorney General Tom Reilly. "Consumer Protection." Retrieved January 10, 2006. <http://www.ago.state.ma.us/sp.cfm?pageid=1605>

Utilities are restricted in the choice of their due date for utility bills to a minimum of 22 days. There are also limits on the size of security deposits.<sup>91</sup>

### **New Mexico**

There is no disconnection for nonpayment if the customer meets the qualifications for the low income home energy assistance program. The utility company shall report the customer's need for assistance to the human services department and the department shall take immediate action to mitigate the problem.

### **North Dakota**

There is no disconnection permitted for customers who enter into a payment plan with the utility.

### **Rhode Island**

State rules forbid disconnection for the elderly, ill, disabled, unemployed or those eligible for public assistance. Disconnection is also not permitted if arrears are less than \$375 for primary source of heat or less than \$110 if not the primary source of heat.

### **Ontario**

---

<sup>91</sup> <http://www.liheap.ncat.org/Disconnect/SeasonalDisconnect.htm>

The Ministry of Energy's Conservation Action Team referenced above has recommended in its 2005 Report the following measures for adoption :

**23** Raise the energy efficiency standards in the Ontario Building Code. Harmonize codes with federal government codes.

**24** Require all new multi-residential units (condominiums, co-operatives, apartments, and townhouses) to be individually metered. Determine how best to achieve individual/sub-metering benefits in other sectors including existing multi-residential units.

**25** Remove barriers - either explicit barriers or ones created by omission - to conservation, cogeneration and emerging energy technologies embedded in agency codes and practices, including but not limited to the Ontario Energy Board, Electrical Safety Authority, Technical Standards and Safety Authority, Municipal Codes, Ontario Fire Code.<sup>92</sup>

**26** Increase the rate of development of higher efficiency standards for products and equipment.

**27** Incent the removal of old, inefficient products from the secondary (resale) market and ensure proper disposal and recycling.

## California

While functioning more as a watchdog than a consumer protection program per se, the California Low Income Oversight Board offers an interesting model for ensuring the proper attention to conservation issues of disadvantaged customers. The Low Income Oversight Board (LIOB or Board) was established by the California legislature for the purpose of advising the California Public Utilities Commission (CPUC or Commission) on the energy low-income assistance programs of utilities under the

---

<sup>92</sup> [http://www.energy.gov.on.ca/index.cfm?fuseaction=conservation.actionteam\\_report2005](http://www.energy.gov.on.ca/index.cfm?fuseaction=conservation.actionteam_report2005)

jurisdiction of the Commission and serving as liaison for the Commission to low-income ratepayers and their representatives. The Oversight Board is active in such issues of concern to its mandate as terms of enrollment in conservation plans or access to utility delivered programs.

## **United Kingdom**

The government's Fuel Poverty strategy includes directives designed to improve energy efficiency in new buildings by mandating minimum performance standards for dwellings and requiring certificates for energy performance at the point of construction, sale or rental.<sup>93</sup> Currently, further improvements of 25% are being planned.

---

<sup>93</sup> [http://www.defra.gov.uk/environment/energy/fuelpov/pdf/fuelpov\\_actionplan.pdf](http://www.defra.gov.uk/environment/energy/fuelpov/pdf/fuelpov_actionplan.pdf)

## **What Works?**

The authors of this report believe that there is little to be gained in attempting to demonstrate that market-based forces including higher energy prices will be sufficient in inducing conservation gains of a kind to produce individual low income consumer savings or similar societal benefits. We cannot imagine any reasonable scenario for testing a hypothesis that implementation of energy conservation measures with resultant savings and benefits for customers with barriers to accessing such measures, such as lack of financial resources, would be greater in a policy environment that provides no program assistance to such customers.

Similarly, it is not the intent of this report to investigate the need for emergency or bill assistance programs, apart from noting their significance as part of an overall plan to reduce “fuel poverty”. However, it makes little sense to provide conservation measures to reduce energy bills for low income customers, if there are significant impediments to staying connected to energy services themselves. Such programs likely form a desirable matrix of supports that enable a public good such as energy to be delivered and be accessible to all citizens in a fashion in keeping with principles of public equity.

The focus of this report is rather the effectiveness of the government and public utility engagement in programs that promote wise energy usage and provide savings to those elements of the residential customer class that have barriers to their participation in similar programs. What is the policy



rationale for financial investments in such programs exclusive of the customers own finances?

There is no jurisdiction that we believe can be cited where there is no public policy justification for attempting to limit energy consumption. Certainly the federal government's public policy goals as noted in the Introduction and our current commitment to meeting the emission standards of the Kyoto protocols drive a prima facie endorsement of these programs.

Further, to this point there are jurisdictions, Ontario being one, that face a very real possibility of running out of energy or at least enduring a prolonged crisis . The Pembina Institute report "Power for the Future- Towards a Sustainable Electricity System for Ontario" identified a need to renew or replace some 25,000 MW of electricity over the next 20 years.<sup>94</sup> The report further notes the wisdom of instituting energy efficient technologies and conservation programs to avoid the need to construct 12,000 MW of electricity at an estimated cost of \$18.2 billion over the 2005-2020 period<sup>95</sup>.

For the most part, the programs that are been detailed in the report consist of tried and true measures that have had success in generating results for customers without barriers to accessing such measures. The specific components of the program package that are designed to reduce the barriers that are associated with access concerns including lack of financial

---

<sup>94</sup> Also contained in "**Towards a Sustainable Electricity System for Ontario? A Provincial Progress Report**", Pembina Institute Oct 2005, p.4

<sup>95</sup> Ibid at p. 2, approximately 50% more for nuclear power production

resources, and an inability to understand or make use of the program features.

This essentially means that the measures that are being provided through the various programs designed to eliminate barriers and described in the report have generally been shown to be effective from the standpoint of meeting the test of a Total Resource Cost Test.

The TRC test is defined as a test that “measures the net costs of a demand-side management program as a resource option based on the total costs of the program, including both the participant’s and the LDC’s costs”<sup>96</sup>. The TRC test measures the benefits and costs of CDM efforts from a societal perspective. Under the TRC test, benefits are driven by avoided resource costs. Costs in the TRC test are the costs of any equipment and program support costs associated with delivering that equipment to the marketplace. In Ontario, for example, the CDM measures implemented by LDCs must pass such a TRC test mandated by the OEB prior to their implementation. This includes the low income programs previously described.

If the measures themselves fit within a TRC, independent of the costs associated to remove barriers to their access, the question arises whether these additional costs alter the equation. While the measures described in this report have not been individually subject to such costing scrutiny in an empirical fashion, it seems difficult to believe that these additional costs represent a tipping point for measures otherwise acceptable. For example,

---

<sup>96</sup> California Public Utilities Commission. (2001) Standard Practice Manual: Economic Analysis of Demand-Side Management Programs and Projects.

the Ontario Power Authority's Conservation Bureau's low income programs will expend an estimated 313 million dollars projected to reduce consumption by 100 MW is at least 50% justified by avoided power generation costs before the customer and LDC savings are noted. Similar analyses of the results of the U.K. fuel poverty approach are likewise confirmatory.

Other jurisdictions have specifically focused on the bill savings afforded to low income customers as a result of the conservation measures in their study of effectiveness. **The California Public Utilities Commission** pursuant to a 2001 decision,<sup>97</sup> requires that Pacific Gas and Electric Company (PG&E), Southern California Edison Company (SCE), San Diego Gas & Electric Company (SDG&E) and Southern California Gas Company (SoCalGas) (together, "the Joint Utilities"), submit a report on low income energy programs. The last report filed in April 2005 entitled the "Joint Utility Low Income Energy Efficiency Program, 2004 Costs and Bill Savings Report."<sup>98</sup> The chart below sets out the results of the analysis in that report of the effectiveness of the low income conservation measures implemented across the four major California utilities by estimating energy costs and establishing a present value for the savings associated with the implementation of such measures.

---

<sup>97</sup> Decision 01-12-020,  
<sup>98</sup>

<http://www.ligb.org/DOCS/Joint%20Utility%20Low%20Income%20Energy%20Efficiency%20Program,%202004%20Cost%20and%20Bill%20Saving%20Report%204-29-05.pdf>

**Exhibit 3-3**  
**Results Summary Across Utility**

*Program Costs*

Program Year	PG&E	SCE	SDG&E	SoCalGas
2002	\$ 65,599,305	\$ 13,971,543	\$ 12,358,189	\$ 30,666,410
2003	\$ 52,520,409	\$ 18,664,182	\$ 12,865,219	\$ 33,998,942
2004	\$ 51,826,340	\$ 16,264,898	\$ 14,405,365	\$ 32,595,808

*Life Cycle Bill Savings*

Program Year	PG&E	SCE	SDG&E	SoCalGas
2002	\$ 33,291,491	\$ 11,055,007	\$ 7,519,036	\$ 8,628,899
2003	\$ 24,118,156	\$ 16,596,630	\$ 6,665,160	\$ 10,342,708
2004	\$ 25,074,904	\$ 15,831,079	\$ 8,235,420	\$ 6,955,642

*Bill Savings to Cost Ratio*

Program Year	PG&E	SCE	SDG&E	SoCalGas
2002	0.51	0.79	0.61	0.28
2003	0.46	0.89	0.52	0.30
2004	0.48	0.97	0.57	0.21

*Per Home Life Cycle Bill Savings*

Program Year	PG&E	SCE	SDG&E	SoCalGas
2002	\$ 471	\$ 372	\$ 534	\$ 182
2003	\$ 510	\$ 492	\$ 424	\$ 181
2004	\$ 516	\$ 424	\$ 553	\$ 127

While the extent of the savings is a function of the cost of the type of energy saved, and the projects undertaken (with the biggest savings coming, as expected, from fuel switching initiatives), it is difficult to minimize the size of the impacts upon low income energy bills associated with the program. With respect to the bill savings to cost ratios, it should be noted that customer bill savings are one component of the benefits achieved through the implementation of these programs. System benefits, including avoided costs of generation, if added to the savings would produce ratios substantially greater than 1.

There is also other evidence that appears to not only justify the additional delivery costs associated with removal of barriers to low income customer participation , but also to suggest that it should be a priority. In their 1999 study, “Analysis of Low-Income Benefits in Determining Cost-Effectiveness

of Energy Efficiency Programs”<sup>99</sup>, study authors John Howat and Jerold Oppenheim attempted to list and quantify the various non-energy, non-environmental benefits associated with investing in efficiency measures for low-income homes. The study examined the effect of these programs on utility efforts to effect collections of accounts, minimize bad debts, reduce termination and reconnections, and lower the numbers of emergency calls caused by poorly maintained energy and electrical systems. The study also noted the positive effect on social service delivery issues including health, housing, and fire prevention and administration costs of social service delivery. Other by-products of such programs included reduced mobility costs, maintenance of affordable housing, reduced mobility costs and improvements to maintenance and property values. The quantification exercise is somewhat specific to the particular characteristics of individual regions and in some cases (e.g. reduction of medical or health-related problems) the benefits cannot be quantified. But for those that can be quantified, the authors note that non-energy benefits in the form of an “adder” of between 17.2 and 326 per cent. Conservatively, they believe that such programs can be ascribed to bringing a **50% non-energy, non-environmental benefit** to the table because of the salutary effects on lives of the customers to whom the services are delivered and the avoided costs associated with the same of the service providers for those customers.

While we have described various barriers to implementation of energy efficiency and conservation measures that may exist for various population groups, and different jurisdictional approaches to removing them, we don’t intend to provide a formulaic prescription for how to go about barrier

---

<sup>99</sup> [http://www.consumerlaw.org/initiatives/energy\\_and\\_utility/non\\_energy\\_benefits.shtml](http://www.consumerlaw.org/initiatives/energy_and_utility/non_energy_benefits.shtml)

removal in various jurisdictions. Obviously the ability to exercise some options (i.e. fuel switching) can only be recommended where an alternate supply is available. There do seem to be some common elements to successful take-up:

1. Customer Education and Outreach: This includes individual hands-on customer attention in the form of such measures as home energy audits, or the U.K. “benefits check” to establish what can be done and how to keep conservation measures working. Maximum program penetration is best achieved when there is a fit between the program materials and communication and the level of understanding and comprehension of the target customer group. Multilingual and simple text material is a must. Education also includes follow up and monitoring to ensure there has been successful interface between delivery agents and customers and that the measures are working properly<sup>100</sup>.
2. Elimination or reduction of up front costs: The societal goal of reduced consumption cannot be achieved by lowering the quality of life for the customers of the target groups. Many programs require no capital outlay, an essential for those with financial barriers.
3. There can be little doubt that from the standpoint of duplication it is preferable that the existing entities that have an ongoing relationship with the customer and an interest in energy consumption issues are

---

<sup>100</sup> In a 2001 presentation to the ACEE Energy Efficiency and Reliability Conference, Mary Drain of PG&E noted the importance of innovative outreach and coordination efforts including multicultural materials and user-friendly paperwork

the delivery agents for such programs. For example, the administration of social housing or the staff of the local energy distribution company, where feasible, are likely first choices for particular target populations. Local community groups that supply services to low-income households and non-profit groups with experience in delivering energy efficiency programs are also potential participants<sup>101</sup> However, in terms of directing authority and supervision, the U.K. fuel poverty model with its government publicized targets, deadlines, and dedicated follow-up appears to present the least risk that these programs will fall through bureaucratic cracks. Part of its force may derive from its focus upon effects upon the lives of its citizens rather than energy costing and statistics. The state of California has also recognized the importance of having specific official support with the state establishment of a Low Income Oversight Board.

Finally, although we recognize that the economics of these programs may be massively in favour of their being undertaken, independent of the resolution of inappropriate allocation of benefits between renter customers and public and private housing providers, we believe that the problem has the potential to sour potential participating customers and other ratepayers or taxpayers. The public policy experience with programs designed to meet income disparities is that abuse or anomalous results tend to spur opposition and obstruction in spite of the overall positive effects.

---

<sup>101</sup> IndEco 2004:vi

The delivery of government programs to ostensibly assist low income Canadians with energy costs has been subject to informed criticism in the recent past because of the sloppiness of the approach associated with such a government initiative. The Auditor General's Report of 2001 noted the following:

In January 2001, the government provided relief for heating expenses to recipients of the goods and services tax credit (GSTC). The amount of the relief was \$125 for individuals or \$250 for families. The House of Commons had approved a Notice of Ways and Means motion in October 2000 that included the proposed relief. However, Parliament was dissolved before the necessary legislation to amend the *Income Tax Act* was introduced, debated, and approved. The payments were authorized by an order-in-council, and the funds were provided by special warrants. Furthermore, giving the relief to recipients of the GSTC greatly reduced its effectiveness in achieving the government's objectives. Only about \$250 million to \$350 million of the over \$1.4 billion was paid to low- and modest-income households that faced immediate increases in heating expenses.

In this case the desire for immediate action and political effect obscured the underlying problem with the screening mechanism. As the Auditor-General noted:



Overall, there is a weak relationship between those who received the GSTC and those who needed assistance for increases in their heating expenses.<sup>102</sup>

Similar kinds of results for some of the initiatives set out in this report would be harmful to the policy attention required for addressing barriers to achieving energy efficiency for disadvantaged customers.

---

<sup>102</sup> “Report of the Auditor-General 2001”, paras 13.26-13.45

## **Conclusions**

As this report has described, policy makers in Canada, the United States and the United Kingdom have moved to implement programs to ensure that all segments of the energy consuming population are able to access programs to lower their own energy bills and to produce an array of system benefits including avoided costs of generation and lower emissions from energy use. These programs have largely been similar to those taken up by the general residential consuming population but modified to meet the needs of those consumers for whom there are barriers, chiefly financial, to their adoption.

There are two general observations that can be made about the effectiveness of such programs to date:

2. The programs have a material effect upon the well-being of the consumer participants, including but not limited to a reduction in household expenses.
3. The program outlays are easily justified financially from the standpoint of any reasonable accounting for benefits, and politically from its ability to provide a higher standard of living for those citizens who are too marginalized to obtain an equivalent positive effect on their own.

Indeed, as this report has demonstrated, there is every reason, to encourage policy and decision makers to pursue the measures set out in this report as a first priority rather than a kind of add-on. There are significant non-energy, non-environmental benefits that are easily captured by utilities embarking

upon such programs. There also a range of supporting programs including rate assistance and implementation of consumer protection standards that can be part of a well designed strategy of energy distribution in general and meeting special customer needs in particular<sup>103</sup>.

There is little reason to downplay the importance of the measures described in this report in preference to the incenting of new supply or load shifting. It is difficult to understate the critical nature of this lesson or minimize the ease of the contrary propositions being adopted. As the recent Pembina Institute report notes about the Ontario experience to date:

Despite the very large potential in Ontario for cost effective reductions in future electricity demand through energy efficiency measures, the overwhelming emphasis of the government's actions to date have been on the supply side. This supply-side orientation is highlighted by the commitment of an estimated \$10.5 billion to supply initiatives against the \$163 million made available for conservation and efficiency, a dollar-to-dollar ratio of 64:1.... In addition, the government has defined demand side initiatives largely, to date, in terms of demand response, seeking to shift peak loads, rather than reduce overall electricity consumption. This theme is emphasized by the government's high-profile smart metering initiative. Demand response measures may be extremely useful in dealing with periods of extremely

---

<sup>103</sup> Ibid at Footnote p. 19

high peak demand, but their ultimate potential to improve energy efficiency and reduce energy consumption is limited.

The difficulty in entrenching conservation as the pre-eminent tool to deal with the gap between consumption and supply perhaps emphasizes the point made earlier in this report, that a policy focus, similar to the U.K.'s ending fuel poverty campaign, is an important element in the effort to change political, industrial and residential cultures. The programs described herein may have far reaching positive effects on the entire conservation effort by "making lives better" in addition to altering the supply/demand equation.

## **Bibliography**

Alberta Government, Human Resources and Employment. "Alberta Works: About Alberta Works." Alberta Government. July 13, 2005.

<http://www3.gov.ab.ca/hre/albertaworks/index.asp>

Alberta Works. "Emergency Assistance for Albertans Facing Utility Disconnection: 2004-2005)." Government of Alberta. July 13, 2005.

[http://www3.gov.ab.ca/hre/isp/publications/pdf/isp\\_emergency.pdf](http://www3.gov.ab.ca/hre/isp/publications/pdf/isp_emergency.pdf)

Alberta Works. "Fact Sheet: Emergency Assistance for Albertans Facing Utility Disconnection." Retrieved January 16, 2006b.

[http://www3.gov.ab.ca/hre/isp/publications/pdf/isp\\_emergency.pdf](http://www3.gov.ab.ca/hre/isp/publications/pdf/isp_emergency.pdf)

Asher, Allan (August 2005). "Fuel Poverty is 'new social evil.'" BBC website. August 24, 2005. <http://news.bbc.co.uk/1/hi/business/4656517.stm>

B.C. Hydro. "June 15, 2005. Power Smart Program Offers Incentives and Tools to Developers. BC Hydro Helps Buildings be More Energy Efficient." B.C. Hydro. July 13, 2005a. <http://www.bchydro.com/news/2005/jun/release24778.html>

Belliveau, Marc. ([Marc.Belliveau@gnb.ca](mailto:Marc.Belliveau@gnb.ca)) "Re: Question." E-mail to Elizabeth Kim ([ekim@piac.ca](mailto:ekim@piac.ca)). July 28, 2005.

British Columbia Utilities Commission (BCUC). "British Columbia Hydro and Power Authority 2004/05 and 2005/06 Revenue Requirements Application and An Application by British Columbia Transmission Corporation for Approval of an Application for Deferral Accounts. Hearing Issues List, May 17, 2004." BCUC. July 13, 2005.

[http://www.bcuc.com/Documents/Proceedings/2004/DOC\\_4448\\_A-26%20BCUC%20Hearing%20Issues%20List.pdf](http://www.bcuc.com/Documents/Proceedings/2004/DOC_4448_A-26%20BCUC%20Hearing%20Issues%20List.pdf)

Canadian Federation of Students ([web@cfs-fcee.ca](mailto:web@cfs-fcee.ca)). "Re: Question." E-mail to Elizabeth Kim ([elizabethmaekim@yahoo.ca](mailto:elizabethmaekim@yahoo.ca)). June 24, 2005.

Canadian Housing and Renewal Association (CHRA). *Affordable & Efficient: Towards a National Energy Efficiency Strategy for Low-Income Canadians (Discussion Paper)*. Ottawa, Ontario: CHRA 2005a.

Canadian Housing and Renewal Association (CHRA). "Government of Saskatchewan 5 year plan to invest \$200M into Affordable Housing, May 5, 2004: Homefirst Opens the Door to Independence." August 4, 2005b. <http://www.chra-achru.ca/english/View.asp?x=592&mp=531>

Canadian Housing and Renewal Association (CHRA). “Below is a very interesting update provided by Michael Shapcott.” Newsletter/e-mail list-serve. June 2005c.

Canadian Mortgage and Housing Corporation (CMHC). “Improving Quality and Affordability: Energy-Cost Saving Program for Low-Income Households – Montreal, Quebec.” July 28, 2005a. <http://www.cmhc-schl.gc.ca/en/imquaf/afho/afadv/opma/reenco/case2.cfm>

Canadian Mortgage and Housing Corporation (CMHC). “Programs and Financial Assistance.” June 30, 2005b <http://www.cmhc-schl.gc.ca/en/prfias/rerepr/index.cfm>

Canadian Mortgage and Housing Corporation (CMHC). “Rental Residential Rehabilitation Assistance Program – Rental RRAP.” July 31, 2005c. [http://www.cmhc-schl.gc.ca/en/prfias/rerepr/readaspr\\_004.cfm](http://www.cmhc-schl.gc.ca/en/prfias/rerepr/readaspr_004.cfm)

Canadian Mortgage and Housing Corporation (CMHC). “Residential Rehabilitation Assistance Program for Persons with Disabilities (RRAP – Disabilities).” July 31, 2005d. [http://www.cmhc-schl.gc.ca/en/prfias/rerepr/readaspr\\_005.cfm](http://www.cmhc-schl.gc.ca/en/prfias/rerepr/readaspr_005.cfm)

Canadian Mortgage and Housing Corporation (CMHC). “Residential Rehabilitation Assistance Program – Rooming House.” July 31, 2005e. [http://www.cmhc-schl.gc.ca/en/prfias/rerepr/readaspr\\_006.cfm](http://www.cmhc-schl.gc.ca/en/prfias/rerepr/readaspr_006.cfm)

City of Seattle. “Office of Housing: Housing Resources Guide. Utility Assistance Programs.” City of Seattle. July 7, 2005. <http://www.cityofseattle.net/housing/HousingResourcesGuide99/Utility.htm>

Community Resources and Information. “Fuel and Utility Assistance.” *Online Posting*. Community Resources and Information. July 7, 2005a. [http://www.massresources.org/area\\_assistance.cfm?pageID=14&MainPage=%27yes%27](http://www.massresources.org/area_assistance.cfm?pageID=14&MainPage=%27yes%27)

Community Resources and Information. “Community Services: HEARTWAP (Heating Emergency Assistance Retrofit Task Weatherization Assistance Program): A Heating System Repair Program.” Community Resources and Information. July 7, 2005b. [http://www.mass.gov/dhcd/components/cs/1PrgApps/H\\_WAP/default.HTM](http://www.mass.gov/dhcd/components/cs/1PrgApps/H_WAP/default.HTM)

Conservation Action Team. *Building a Conservation Culture in Ontario: Report of the Conservation Action Team to the Honourable Dwight Duncan, Minister of Energy, May 19, 2005*. August 5, 2005. [http://www.energy.gov.on.ca/english/pdf/conservation/CAT\\_Report.pdf](http://www.energy.gov.on.ca/english/pdf/conservation/CAT_Report.pdf)

Cook, Marilyn ([MarilynCook@gov.nl.ca](mailto:MarilynCook@gov.nl.ca)). “Re: Inquiry.” E-mail to Elizabeth Kim ([elizabethmaekim@yahoo.ca](mailto:elizabethmaekim@yahoo.ca)). July 27, 2005.

Defra et al. (2005) The U.K. Fuel Poverty Strategy: 3<sup>rd</sup> Annual Progress Report 2005. DTI and Defra:  
[http://www.dti.gov.uk/energy/consumers/fuel\\_poverty/strategy\\_third\\_progress\\_report.pdf](http://www.dti.gov.uk/energy/consumers/fuel_poverty/strategy_third_progress_report.pdf)

Department of Energy, An Interdepartmental Energy Policy Working Group. White Paper: New Brunswick Energy Policy. New Brunswick Natural Resources and Energy. July 21, 2005. <http://www.gnb.ca/0085/energy.pdf>

Department for Environment, Food and Rural Affairs (DEFRA) *et al.* *The UK Fuel Poverty Strategy: 1<sup>st</sup> Annual Report*. London, England: DTI Publications Orderline 2003.

Department of Health and Human Services (DHHS). “Welcome to the Emergency Assistance Program.” New Hampshire Government. July 7, 2005.  
<http://www.dhhs.state.nh.us/DHHS/RENTUTILITYHELP/default.htm>

Department of Trade and Industry, Department of Transport and Defra (2003) Energy White Paper – Our Energy Future – Creating a Low Carbon Economy. The Stationary Office. September 15, 2005.  
<http://www.dti.gov.uk/energy/whitepaper/ourenergyfuture.pdf>

Eaga Partnership Scotland. “Warm Deal: A Guide to the Scottish Executive’s Warm Deal Scheme.” Eaga. September 12, 2005a.  
[http://www.eaga.co.uk/Grants/warm\\_deal.htm](http://www.eaga.co.uk/Grants/warm_deal.htm)

Eaga Partnership Scotland. “Warm Homes – Northern Ireland.” Eaga. September 12, 2005b. <http://www.eaga.co.uk/Grants/warmhomes.htm>

Eaga Partnership Scotland. “Warm Homes Plus – Northern Ireland.” Eaga. September 12, 2005c. [http://www.eaga.co.uk/Grants/warmhomes\\_plus.htm](http://www.eaga.co.uk/Grants/warmhomes_plus.htm)

Eaga Partnership Scotland. “Home Energy Efficiency Scheme (HEES) in Wales.” Eaga. September 12, 2005d. [http://www.eaga.co.uk/Grants/hees\\_wales.htm](http://www.eaga.co.uk/Grants/hees_wales.htm)

Eaga Partnership Scotland. “Home Energy Efficiency Scheme (HEES) Plus in Wales.” Eaga. September 12, 2005e. [http://www.eaga.co.uk/Grants/hees\\_wales\\_plus.htm](http://www.eaga.co.uk/Grants/hees_wales_plus.htm)

Enbridge Gas New Brunswick. “Converting is Easy.” Enbridge. July 26, 2005.  
<http://www.amazingenergy.ca/rebates.php>

Energy Coordinating Agency (ECA). “Low Income Services.” Retrieved January 20, 2006. <http://www.ecasavesenergy.org/lowincome.html>

Energy Efficiency and Renewable Energy (EERE – U.S. Department of Energy). “Weatherization Assistance Program.” Retrieved January 16, 2006.  
[http://www.eere.energy.gov/weatherization/source\\_fund.html](http://www.eere.energy.gov/weatherization/source_fund.html)

Energyshop.com. "Natural Gas Prices – Historical and Forecast." Retrieved January 22, 2006. <http://www.energyshop.com/es/homes/gas/gaspriceforecast.cfm>

Energy Solutions Alberta. "Furnace Programs Reheats Province." July 15, 2005. [http://www.energysolutionsalberta.com/default.asp?V\\_DOC\\_ID=1111](http://www.energysolutionsalberta.com/default.asp?V_DOC_ID=1111)

Equiterre. "Quebec's Low Income Energy Efficiency Program." Sidney Ribaux. July 28, 2005. [http://www.chra-achru.ca/CMFiles/Sidney\\_Ribaux19MUC-5162005-5287.ppt](http://www.chra-achru.ca/CMFiles/Sidney_Ribaux19MUC-5162005-5287.ppt)

Equiterre. *Annual Report 2004*. Montreal: Equiterre, 2004. July 28, 2005. [http://www.equiterre.qc.ca/english/home/rapport\\_ang\\_2004.pdf](http://www.equiterre.qc.ca/english/home/rapport_ang_2004.pdf)

Green Communities Canada. "NAHEEP Backgrounder." June 30, 2005. <http://www.gca.ca/indexcms/index.php?backgrounder>

Heritage Gas. "Natural Gas Equipment Rebate Program." July 28, 2005. <http://www.heritagegas.com/converting/cvprog.asp>

IndEco Strategic Consulting Inc. *Low Income Energy Conservation and Assistance*. Toronto, Ontario: IndEco Strategic Consulting Inc. 2004.

IndEco Strategic Consulting Inc. *Low Income Energy Conservation and Assistance*. Toronto, Ontario: IndEco Strategic Consulting Inc. 2004.

IndEco and LIEN. *Low-Income Energy Efficiency Program: Designing a Low-Income Energy Efficiency Program: Recommendations for Toronto Hydro and Other Ontario Electricity Local Distribution Companies*. Toronto, Ontario: IndEco Strategic Consulting Inc. 2004.

LIHEAP Clearinghouse, U.S. Department of Health and Human Services, Administration for Children and Families. "New York." Retrieved January 20, 2006. <http://www.liheap.ncat.org/profiles/NY.htm>

Low-Income Energy Network (LIEN). "LIEN, The Low-Income Energy Burden in Ontario and the Impact of Non-Action." PowerPoint Presentation. July 13, 2005. [http://www.lowincomeenergy.ca/A55AB4/lien.nsf/235a6bfd2d43c5d085256f8500649642/567d9d94bcfafabd85256fbf0013706a/\\$FILE/LIEN%20background%20presentation.pdf](http://www.lowincomeenergy.ca/A55AB4/lien.nsf/235a6bfd2d43c5d085256f8500649642/567d9d94bcfafabd85256fbf0013706a/$FILE/LIEN%20background%20presentation.pdf)

Manitoba Hydro. "Saving with Power Smart." Manitoba Hydro. July 20, 2005a. [http://www.hydro.mb.ca/saving\\_with\\_ps/psmart\\_overview.shtml](http://www.hydro.mb.ca/saving_with_ps/psmart_overview.shtml)

Manitoba Hydro. "Saving with Power Smart, Power Smart for Your Home: Wisdom in Saving Energy, W.I.S.E. Home Program for Seniors." Manitoba Hydro. July 20, 2005b. [http://www.hydro.mb.ca/saving\\_with\\_ps/psmart\\_wisesome.shtml](http://www.hydro.mb.ca/saving_with_ps/psmart_wisesome.shtml)



Manitoba Hydro. "Saving with Power Smart, Power Smart for Your Home: Power Smart Residential Loan." July 20, 2005 c.

[http://www.hydro.mb.ca/saving\\_with\\_ps/psmart\\_residential\\_loan.shtml](http://www.hydro.mb.ca/saving_with_ps/psmart_residential_loan.shtml)

MassResources.org. "Utility Shutoff Protection: An Overview." Retrieved January 10, 2006

<http://www.massresources.org/pages.cfm?contentID=39&pageID=14&Subpages=yes>

Ministry of Community and Social Services. "FAQ's Emergency Energy Fund." July 28, 2005. <http://www.cfcs.gov.on.ca/NR/MCFCS/news/en/040329.doc>

Natural Resources Canada (NRCAN). "Residential Energy-Efficiency Retrofit Incentives Expanded." Press Release June 23, 2005. June 30, 2005. [http://www.nrcan-mrcan.gc.ca/media/newsreleases/2005/200545\\_e.htm](http://www.nrcan-mrcan.gc.ca/media/newsreleases/2005/200545_e.htm)

Newfoundland and Labrador Housing Corporation (NLHC). "Provincial Home Repair Program (PHRP)". 1998. July 22, 2005. <http://www.nlhc.nf.ca/programs/phrp.htm>

National Advisory Council on Aging. "Working for Canada's Seniors Today and Tomorrow: Seniors on the Margins: Aging in Poverty in Canada." Retrieved January 22, 2006. [http://www.naca-ccnta.ca/margins/poverty/poverty2\\_e.htm](http://www.naca-ccnta.ca/margins/poverty/poverty2_e.htm)

New Hampshire Department of Health and Human Services "Welcome to the Temporary Assistance for Needy Families Program." Retrieved January 10, 2006

<http://www.dhhs.nh.gov/DHHS/TANF/default.htm>

New York. "The Weatherization Network Initiative (WNI)." Retrieved January 20, 2006.

<http://www.getenergysmart.org/WhereYouLive/WeatherizationInitiative/overview.asp>

New York State Energy Research and Development Authority (NYSERDA) and New York Energy Smart. *New York Energy Smart: Low-Income Energy Affordability Program. Evaluation and Status Report (July 1998 Through June 2002). Report to the New York State Department of Public Service.* New York: NYSERDA, 2002.

North West Energy Coalition (NWECC). NW Energy Coalition Report. Nov/Dec 2003. 22(10): 8. July 15, 2005.

[http://www.nwenergy.org/publications/report/03\\_nov.dec/rp\\_0311\\_8.html](http://www.nwenergy.org/publications/report/03_nov.dec/rp_0311_8.html)

Nova Scotia, Department of Energy. "Financial Assistance Programs." July 28, 2005.

<http://www.gov.ns.ca/energy/AbsPage.aspx?id=1301&siteid=1&lang=1>

Office of Massachusetts Attorney General Tom Reilly. "Consumer Protection." Retrieved January 10, 2006. <http://www.ago.state.ma.us/sp.cfm?pageid=1605>

Ofgem (the Office of the Gas and Electricity Markets) (2005). "Press Release: 10 Million Households Receive Help to be More Energy Efficient." September 15, 2005.

[http://www.ofgem.gov.uk/temp/ofgem/cache/cmsattach/12016\\_r36\\_2Aug05.pdf?wtfrom=/ofgem/index.jsp](http://www.ofgem.gov.uk/temp/ofgem/cache/cmsattach/12016_r36_2Aug05.pdf?wtfrom=/ofgem/index.jsp)

Ontario Non-Profit Housing Association, “About Non-Profit Housing: Non-Profit Housing Statistics.” June 30, 2005.

[http://www.onpha.on.ca/about\\_non\\_profit\\_housing/default.asp?load=important\\_statistics](http://www.onpha.on.ca/about_non_profit_housing/default.asp?load=important_statistics)

Proud, Florine ([ISLAND@gov.pe.ca](mailto:ISLAND@gov.pe.ca)) “Re: Energy Programs?” E-mail to Elizabeth Kim ([elizabethmaekim@yahoo.ca](mailto:elizabethmaekim@yahoo.ca)). July 29, 2005.

Public Utilities Commission of Ohio (PUCO). “Energy Assistance Programs: Help with Paying Your Utility Bills.” PUCO. July 7, 2005.

[http://www.puco.ohio.gov/PUCO/Consumer/information.cfm?doc\\_id=93](http://www.puco.ohio.gov/PUCO/Consumer/information.cfm?doc_id=93)

Scottish Gas and British Gas. (2002) A Brighter Future: Energy Efficiency Programme 2000/2002. Centrica. August 24, 2005.

[http://www.centrica.co.uk/files/pdf/EESop\\_Annual\\_Report\\_2002.pdf](http://www.centrica.co.uk/files/pdf/EESop_Annual_Report_2002.pdf)

Share the Warmth. “Share the Warmth Proposal for Ministry of Community and Social Services.” July 28, 2005a.

[http://warmth.blunt.com.au/1.0/reports/Provincial\\_Govt\\_Community\\_Services\\_Report\\_2004.pdf](http://warmth.blunt.com.au/1.0/reports/Provincial_Govt_Community_Services_Report_2004.pdf)

Share the Warmth. “Share the Warmth.” July 28, 2005b.

[http://warmth.blunt.com.au/1.0/index.php?site\\_switch\\_set=flash](http://warmth.blunt.com.au/1.0/index.php?site_switch_set=flash)

Share the Warmth. “Program Reports.” Share the Warmth. July 28, 2005.

[http://warmth.blunt.com.au/1.0/index\\_programreports.php?site\\_switch=flash](http://warmth.blunt.com.au/1.0/index_programreports.php?site_switch=flash)

Sieber, Ray ([rsieber@dcre.gov.sk.ca](mailto:rsieber@dcre.gov.sk.ca)) “Energy Efficiency for Low Income Households” E-mail to Elizabeth Kim ([elizabethmaekim@yahoo.ca](mailto:elizabethmaekim@yahoo.ca)). July 28, 2005.

Social Housing Services Corporation (SHSC). “For Immediate Release: Major urban Electricity Utilities Help Social Housing Keep Energy Costs Affordable, Toronto, June 6, 2005.” August 5, 2005.

[http://www.shscorp.ca/\(tzdtap2le0pezadxrnyvcqt\)/content/docs/SHSC-powerWISE%20media%20release.pdf](http://www.shscorp.ca/(tzdtap2le0pezadxrnyvcqt)/content/docs/SHSC-powerWISE%20media%20release.pdf)

Statistics Canada. *Income Research Paper Series: Low Income Cut-Offs for 2004 and Low Income Measures for 2002*. Ottawa: Statistics Canada, 2004.

<http://www.statcan.ca/english/research/75F0002MIE/75F0002MIE2005003.pdf>

Statistics Canada. “Population by sex and age group, by provinces and territories, 2004.” June 23, 2005a. <http://www40.statcan.ca/cgi-bin/getcans/sorth.cgi?lan=eng&dtype=fina&filename=demo31a.htm&sortact=1&sortf=5>

Statistics Canada. “Definitions: Disability.” June 23, 2005b.  
<http://www.statcan.ca/english/freepub/89-577-XIE/def.htm>

Statistics Canada. “Population with and without disabilities, and disability rate, by province, Canada and Provinces, 2001.” June 23, 2005c.  
<http://www.statcan.ca/english/freepub/89-577-XIE/tables/table1.htm>

Statistics Canada. “Immigrant population by place of birth, by provinces and territories (2001 Census).” June 23, 2005d. <http://www40.statcan.ca/101/cst01/demo34b.htm>

Statistics Canada. “Household Type, in Private Households, 2001 Counts, for Canada, Provinces and Territories – 20% Sample Data.” June 23, 2005e.  
<http://www12.statcan.ca/english/census01/products/highlight/PrivateHouseholds/Page.cfm?Lang=E&Geo=PR&Code=0&View=1a&Table=1&StartRec=1&Sort=2&B1=Counts>

Statistics Canada. “Tenure (6) and Structural Type of Dwelling (9) for Occupied Private Dwellings, for Canada, Provinces, Territories, Census Metropolitan Areas and Census Agglomerations, 2001 Census, 20% Sample Data.” June 23, 2005f.  
<http://www12.statcan.ca/english/census01/products/standard/themes/RetrieveProductTable.cfm?Temporal=2001&PID=67536&APATH=3&GID=431515&METH=1&PTYPE=55430&THEME=55&FOCUS=0&AID=0&PLACENAME=0&PROVINCE=0&SEARCH=0&GC=0&GK=0&VID=0&FL=0&RL=0&FREE=0>

Statistics Canada. “Selected Dwelling Characteristics and Household Equipment.” June 30, 2005g. <http://www40.statcan.ca/101/cst01/famil09a.htm?sdi=household>

Statistics Canada. “Farm Population by Provinces (2001 Censuses of Agriculture and Population).” June 23, 2005h.  
<http://www40.statcan.ca/101/cst01/agrc42a.htm?sdi=urban>

Statistics Canada. “Incidence of Low Income among the Population living in Private Households by Province (1996 and 2001 Censuses).” August 5, 2005i.  
<http://www40.statcan.ca/101/cst01/famil60b.htm>

Statistics Canada. “Benchmarking Adult Literacy in North America: An International Comparative Study.” by Albert Tuijnman, HRDC, 2001. June 29, 2005j.  
<http://www.statcan.ca/english/freepub/89-572-XIE/89-572-XIE1998001.pdf>

Statistics Canada. “Average Household Expenditures, by Provinces and Territories.” July 13, 2005k. <http://www40.statcan.ca/101/cst01/famil16d.htm>

Stewart, Keith ([ana@torontoenvironment.org](mailto:ana@torontoenvironment.org)). “Re: Low Income Energy Programs.” E-mail to Elizabeth Kim ([ekim@piac.ca](mailto:ekim@piac.ca)). July 28, 2005.

Texas Department of Housing and Community Affairs (TDHCA). “Energy Assistance.” TDHCA. July 7, 2005. <http://www.tdhca.state.tx.us/ea.htm>

The Warm Front Team. "The Warm Front Grant." Hestia Services. September 12, 2005. [http://www.savenergy.org/GrantOffers/Warm\\_Front.htm](http://www.savenergy.org/GrantOffers/Warm_Front.htm)

Toronto Environmental Alliance (TEA). "Growing Number of Households Caught in Ontario Energy Crisis." July 15, 2005a. <http://www.torontoenvironment.org/node/107>

Unicef. Report Card No. 6: Child Poverty in Rich Countries 2005: The Proportion of Children living in Poverty has Risen in a Majority of the World's Developed Economies. The Unicef Innocenti Research Centre: Florence, Italy. Retrieved January 20, 2006. <http://www.unicef.ca/press/childpoverty/assets/ReportCard6.pdf?PHPSESSID=9c589d81a59b43d2b20ef2cceb719bf5>

U.S. Department of Health and Human Services, Administration for Children and Families (USDHHS). "LIHEAP Clearinghouse." National Center for Appropriate Technology (NCAT). July 7, 2005. <http://www.liheap.ncat.org/profiles/Wisconsin.htm>

West Virginia Department of Health and Human Resources, Bureau for Children and Families (WVDHHR). "Family Assistance: Utility Assistance." WVDHHR. July 7, 2005. [http://www.wvdhhr.org/bcf/family\\_assistance/utility.asp](http://www.wvdhhr.org/bcf/family_assistance/utility.asp)