

Energy Efficiency and Energy Affordability for Low- Income Households

-Issue Paper Six-

**Energy Efficiency Working Group
Energy Sector Sustainability Table**

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Preface

The Energy Sector Sustainability Table (ESST) was established in 2005 as a multi-stakeholder advisory mechanism - including senior representatives from governments, industry, and civil society – created by the Government of Canada to provide advice on how best to meet the energy needs of Canadians so as to improve the environmental and economic sustainability of energy systems in Canada and to make recommendations on short-and long-term sustainable energy objectives.

Energy efficiency was identified as key priority for the ESST so the Table established the Energy Efficiency Working Group (EEWG). The EEWG is a committee of industry, government and civil society experts mandated to provide the ESST with an expert perspective on energy efficiency in Canada. The EEWG has produced several products including its Energy Efficiency in Canada Foundation Paper, a series of issue papers, and a final report summarizing the key conclusions and recommendations that resulted from the EEWG’s work.

This issue paper is one in a series of a total of eight issue papers. The paper, as well as all other EEWG products, was prepared by the EEWG in conjunction with Marbek Resource Consultants and Dr. Michael Margolick.

To access other EEWG documents or for more information about the Energy Sector Sustainability Table and its Energy Efficiency Working Group, please visit: <http://www.sst.gc.ca>

SUMMARY

Many low-income households in Canada pay a large proportion of their budget in energy bills and are vulnerable to financial hardship and adverse comfort and health outcomes. As of 2003, the lowest-income quintile of households spent over four times the percentage of its pre-tax income on fuel and electricity (9.1%) as did the 3rd quintile (2.1%) and almost nine times the percentage of the top quintile (1.1%). Families with incomes below Statistics Canada's Low-Income Cut-Off (LICO) averaged 20.3% of their total expenditure on fuels and electricity, versus 7.0% for those above the LICO.

Low-income EE can be highly cost-effective for governments and utilities. While low-income households tend to be motivated to use less energy, they do not have discretionary income to pay for EE investments. Therefore, logically there should be little free-ridership in low-income EE programs. Other benefits include fewer disconnections, late payments and bad debts; a low expectation of rebound, or re-spending of bill savings on energy-intensive goods and services; and potential economies of scale in social housing. Third-party benefits from low-income EE range from improved health outcomes to better landlord/tenant relations to reduced fire and asphyxiation risk from unsafe emergency heating.

Periods of extreme temperatures have a special impact on household energy bills, as both household energy consumption and energy prices tend to spike during such times. Heat-related health impacts in Canada may be expected to worsen due to climate change. Low-income EE can mitigate these impacts and reduce the costs of any emergency bill rebates made during such times.

Since 1990, the UK has implemented extensive programs designed to eliminate fuel poverty in vulnerable households by 2010. Energy efficiency measures, energy market measures and social inclusion measures are delivered primarily through partnerships among government departments, and with local and housing authorities, utilities and specified delivery agencies. The program references policies in the areas of climate change, social equity and health.

Canadian low-income EE programs currently exist in most provinces. The most common low-income EE programs are weatherization, followed by heating and appliance upgrades. Program participants include Provincial governments, Crown and private utilities, municipal agencies and NGOs.

It is important to distinguish owner-occupied, private tenant and social housing situations when designing programs, as the circumstances of *incentive*, *ownership* (of the energy-using assets) and *access to investment funds* are different. As a particular case, sub-metering of multi-family low-income rental housing may not be an effective conservation measure.

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1. ENERGY AFFORDABILITY AND ENERGY EFFICIENCY

Energy is said to be *affordable* when households can maintain comfortable levels of indoor temperature without undue financial hardship.

There is no legal standard for energy affordability in Canada. The Toronto Environmental Alliance suggests that a 10% of income criterion be used for Ontario.¹ The Ontario Low-Income Energy Network suggests that combined heating and non-heating energy bills should be no more than 6% of total household income for a household that is below Canada's Low-Income Cut-Off (LICO).² The UK defines “fuel poverty” as spending of more than 10% of disposable, after tax income on fuel in order to maintain a satisfactory heating regime (usually 21° for the main living area, 18° for other occupied rooms).³ Based on any of these definitions, energy is not affordable for a significant number of Canadian households (see Section 2 below).

Programs to alleviate energy poverty have multiple objectives, such as social equity, better homelessness and health outcomes, and utility customer service cost reduction. An additional objective can be EE.

For example, periods of extreme temperatures have a special impact on household energy bills, as both household energy consumption and energy prices tend to spike during such times. A long-established response has been a fuel bill rebate, considered as a form of emergency relief.⁴ However these periods recur from time to time.⁵ An alternative, or partial alternative would be an EE program for low-income households. EE reduces the customer's bill on a year-over-year basis and in advance of times of vulnerability, thereby reducing the need for future emergency funding.

Low-income households are attractive customers for EE programs because they are among the least able and thus least inclined to make those investments on their own, i.e. there are unlikely to be free riders. This firms up savings estimates, makes programs more defensible to regulators and reduces unit costs. Other reasons for targeting low-income households include:

- Low-income individuals tend to live in older, poorly-insulated buildings with inefficient heating, cooling and ventilation equipment. From a DSM perspective, this would be considered “low-hanging fruit”.

¹ Toronto Environmental Alliance. *A Low-income Energy Efficiency Program: Mapping the Sector and Program Design Principles*. Report prepared for the Ontario Power Authority's Conservation Bureau. March 2006.

² <http://www.lowincomeenergy.ca/A55AB4/lien.nsf/All/rcolton>

³ <http://www.berr.gov.uk/energy/fuel-poverty/index.html>

⁴ For example Nova Scotia, one of the most vulnerable provinces, replaced its Keep the Heat program in the 2006/07 budget with a Household Energy Rebate that provides an average of approximately \$200/year to an estimated 400,000 households, regardless of family income. Keep the Heat offered a cash rebate of \$100-250, depending on heating fuel, for families with net annual incomes under \$25,000 and for single people with net annual incomes under \$15,000. <http://www.gov.ns.ca/finance/budget06/HouseholdEnergyBulletin.pdf>

⁵ For example, overall energy prices rose 10.2% during 2005, more than four times the increase in the CPI and the fourth year in a row in which energy prices outpaced the CPI by a wide margin <http://www.statcan.ca/english/research/11-621-MIE/11-621-MIE2006042.htm>

- More affordable bills result in fewer complaints, disconnections, late payments and bad debts.⁶ In the US, for example, inability to pay utilities is second only to inability to pay rent as a reason for homelessness.⁷
- There is unlikely to be a substantial rebound effect, as bill savings are more likely to be redirected to other necessities rather than being spent on the purchase of new energy consuming goods, as in the average home.
- Social housing offers opportunities for broad scope, due to the number of units typically included in any one decision. Financial criteria are often more favourable to DSM than in the private sector (e.g. lower discount rates /higher payback period tolerance).

Low-income DSM programs may require complementary rate design. Participant contributions must be kept to a minimum, which implies that these programs are likely not to pass the Ratepayer Impact Test.⁸ Some customer groups have opposed DSM programs that fail the Ratepayer Impact Test, on the grounds that customers who do not participate will see a bill increase. However, these effects may be small when the utility's costs are spread over all customers, and may be mitigated through lifeline rates or through a marginal rate that applies above a fixed, basic level of consumption.

In addition to energy reductions for utilities and participants, there are potential third party benefits of low income DSM programs. A 1999 study concluded that a “benefit adder of between 17 percent and more than 300 percent could reasonably be incorporated to represent the incremental value of a low-income focus beyond the general societal, economic, and environmental benefits of efficiency programs”.^{9, 10}

Third party benefits include:

- Reduced need for public expenditures such as health and building inspections, homeless shelters, and housing programs.
- Landlord benefits through increased property values, reduced turnover of tenants, fewer difficulties with complaints or unpaid rent.

⁶ Toronto Environmental Alliance , 2006.

⁷ Karen Brown, executive director of the Colorado Energy Assistance Foundation, quoted in <http://www.nliec.org/Projects/cold.pdf>

⁸ The Ratepayer Impact Test, also called Non-Participant Test, determines if average rates will go up as a result the program. The lower the participant contribution is, the more likely that the utility's overall unit cost of service will increase.

⁹ Oppenheim, J. and MacGregor, T. October, 2000. *Low income consumer utility issues: a national perspective.* http://www.sharethewarmth.org/docs/low_income.pdf

¹⁰ The California Low Income Public Purpose Test has been defined to allow for such a broad perspective for utility programs. [http://www.ligb.org/DOCS/The%20Low%20Income%20Public%20Purpose%20Test%20\(LIPPT\)%20May%2025,%202001.pdf](http://www.ligb.org/DOCS/The%20Low%20Income%20Public%20Purpose%20Test%20(LIPPT)%20May%2025,%202001.pdf)

- Reduced risk of accidents such as carbon monoxide poisoning or fires from supplementary heating, or damage from frozen pipes.¹¹
- Effective use of living space during temperature extremes as a result of more uniform temperatures among rooms.
- First Nations benefits. Some First Nations communities have highly inefficient building stock, even though the cost of utility services is high due to remoteness. DSM may be additionally attractive in these communities for health reasons because poor building quality is a cause of chronic illness.

¹¹ Toronto Environmental Alliance , 2006.

2. ENERGY COSTS AND INCOME

The energy intensity of household expenditure in Canada is skewed among income levels. Low income households spend a greater proportion of their income on fuels and electricity. The statistics below are the most recent we know of at the national level.

As of 2003, the lowest-income quintile of households spent over four times the percentage of its pre-tax income on fuel and electricity (9.1%) as did the 3d quintile (2.1%) and almost nine times the percentage of the top quintile (1.1%). Families with incomes below Statistics Canada's Low-Income Cut-Off (LICO) averaged 20.3% of their total expenditure on fuels and electricity, versus 7.0% for those above the LICO.¹² As a result, a fixed percentage increase in fuel bills would cause a greater proportional budget impact for a low-income family as for others.

Between 1992 and 2005, average (all-income) household utility costs doubled whereas ownership costs rose by 40% and rental costs rose by 20%.¹³ This statistic suggests that the disparity may be increasing.

Exhibit 1 shows the regional distribution of electricity costs as a percentage of income, as of 2002.¹⁴ The exhibit shows a wide regional disparity, with low-income households in the least affordable city paying twice the income share for power as those in the most affordable.

Exhibit 1
Electricity Bill Comparisons Across Canada¹⁵

City	Monthly power cost (\$)	Power bill as % of Assistance Income	Power bill as % of Stats Can LICO	Power bill as % of Average Income
Edmonton, AB	108.42	11.20 %	5.52%	3.4%
Charlottetown, PE	112.41	10.76%	6.72%	4.6%
Halifax, NS	108	10.58%	6.4%	5%
Regina, SK	101.42	9.84%	6%	4.3%
Moncton, NB	105.10	9.78%	6.24%	5%
Toronto, ON	91.59	7.95%	4.66%	3%
St. John's, NFL	95.16	7.78%	5.65%	4.5%
Winnipeg, MB	68.67	7.23%	3.5%	3.1%
Montreal, QC	69.39	6.25%	3.53%	2.8%
Vancouver, BC	67.47	5.75%	3.44%	2.6%

Source: Dalhousie Legal Aid Service, 2002.

¹² Statistics Canada *Survey of Household Spending, 2003*. The LICO is the income threshold at which a household would be expected to spend 20 percentage points more than the average family (or 43+20 = 63%) on food, shelter and clothing. Note that using pre-tax income overstates the case somewhat because low income households pay less tax.

¹³ <http://www.climateactionnetwork.ca/e/issues/eglih-factsheet.pdf>, p. 2

¹⁴

[http://www.lowincomeenergy.ca/A55AB4/lien.nsf/235a6bfd2d43c5d085256f8500649642/b932a7785ad505b185256fc100533dc6/\\$FILE/DSM%20for%20low%20income%20consumers%20in%20Ontario.pdf](http://www.lowincomeenergy.ca/A55AB4/lien.nsf/235a6bfd2d43c5d085256f8500649642/b932a7785ad505b185256fc100533dc6/$FILE/DSM%20for%20low%20income%20consumers%20in%20Ontario.pdf)

¹⁵ Note that this Exhibit deals only with electricity whereas the figures above include fuel costs. It is not clear from the source, whether or not the percentages are before- or after-tax.

The following statistics apply to Ontario: 18 percent of households are below the low-income cut off line. These roughly 760,000 homes tend to be older, less energy efficient, and over one quarter of them are electrically heated, which is a rate almost twice the Ontario average. The majority of low-income households (65 percent) are tenants, and the majority of these are in the private rental market. Senior-led households make up a significant proportion (about 39%) of the low-income households who own their own homes.¹⁶

Low income households also tend to live in older, poorly insulated housing. The age-distribution of space-heating equipment also varies significantly. Higher-income quintiles are more likely to use newer, and therefore more energy-efficient equipment. This suggests that opportunities for energy savings in equipment are larger among lower-income households.¹⁷

In Canada and elsewhere, low-income EE program eligibility is typically based on income levels. The income thresholds vary between jurisdictions and even between utilities within the same jurisdiction. In the UK and in some US states priority is given to households which have elderly or disabled persons, and/or with young children. The UK defines a household faced with an energy burden as one that spends more than 10% of disposable income (after tax and major payments) on meeting the energy needs of their family.

¹⁶ Toronto Environmental Alliance (2006).

¹⁷ Statistics Canada Survey of Household Spending, 2003

3. EFFECTS OF UNAFFORDABILITY

The primary effect of energy unaffordability is a home that does not supply basic comfort. For example, the (US) National Energy Assistance Directors' Association (NEADA) conducted a survey of 1,184 households receiving (federal) Low-Income Home Energy Assistance Program assistance in 2005. Nineteen percent indicated that they kept their home at a temperature they felt was unsafe or unhealthy, 18 percent left their home for at least part of the day because it was too cold or too hot, and 24 percent used their kitchen stove or oven to provide heat.¹⁸

While natural cold is rarely the primary cause of death in Canada (about 100 deaths per year¹⁹), older people, families with children and people with a disability are particularly vulnerable to cold-related illnesses, such as influenza, heart disease, strokes or asthma.

Elderly people, young children, and those who are sick or overweight are the population segments most susceptible to extreme heat. In particular, people suffering from cardiovascular or respiratory conditions do not cope well.²⁰ Effects are exacerbated by greater air pollution that accompanies heat waves. The potential public health impacts are very substantial: an estimated 35,000²¹ to 50,000²² people, most of them elderly, died as a result of a record heat wave in Europe in 2003.²³

More extended periods of extreme heat are expected in much of Canada due to climate change. Studies have suggested this would result in greater heat-related mortality in some urban centres.²⁴

“Even now, in an average year, a joint City of Toronto, Environment Canada, and Health Canada research project has estimated that 41 people die of extreme-heat-related causes in Montreal. Toronto has an average of 38 extreme-heat-related deaths a year. Due to the increasing impacts of climate change, the heat-related deaths in Canada would increase dramatically in the 21st century. By the 2050s, the study projects the heat-related deaths would more than double and by the 2080s, the deaths would triple in South Central Canada.”²⁵

¹⁸ <http://www.neada.org/communications/surveys/survey2005.pdf> p. 12

¹⁹ Statistics Canada, *Canadian Vital Statistics, Death Database*; 491 deaths attributed to “exposure to excessive natural cold” over 2000 -2005

²⁰ http://findarticles.com/p/articles/mi_m0CYP/is_5_109/ai_76798911

²¹ <http://www.newscientist.com/article.ns?id=dn4259>

²² <http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=551> Para 2 first sentence

²³ Some might argue that these statistics are indicative of more general poverty (i.e. inability to afford the purchase of an air conditioner) rather than energy poverty (i.e. inability to afford the energy to run it).

²⁴ Last, J.M. and Chiotti, Q.P. (2001): *Climate change and health*; Canadian Journal of Policy Research, v. 2, no. 4, p. 62-69

²⁵ http://www.ec.gc.ca/EnviroZine/english/issues/45/feature1_e.cfm.

As an alternative to, or in addition to uncomfortable temperatures, low-income households are often forced to forego other essentials. In the NEADA survey (see above on page 6), 73 percent of respondents reported that they reduced expenses for household necessities because they did not have enough money to pay their energy bills.

4. PROGRAM ASPECTS

A comprehensive approach to energy affordability contains four elements: utility rate design; emergency relief; consumer education; and EE investment.²⁶ Only the EE investment is discussed here.

Typical low income DSM programs include the following energy efficiency measures:

- Energy audits
- Weatherization services, including weather stripping, caulking, attic insulation and provision of storm windows
- Appliance replacement, particularly refrigerators, and
- Furnace repair or replacement.

In general, weatherization services appear to be the most common programs, followed by heating and appliance upgrades.²⁷ Some of the key considerations in programming are:

- Low-income households tend to use less and conserve proportionally more than wealthier households, in terms of home operation.²⁸ However, low-income households do not have access to capital for EE investment. Renters cannot invest directly in EE. A high proportion of elderly, disabled and other low-income individuals are not able or inclined to research, acquire and install their own equipment. As a group, therefore, low-income consumers are limited in their means to implement or finance EE investments, and their resource commitment should be minimized. Possible approaches might include joint funding from ratepayers and taxpayers for energy efficiency investments or a review of existing social programs to identify opportunities for energy efficiency
- It is important to distinguish owner-occupied, private tenant and social housing situations when designing programs, as different circumstances apply in each case. The circumstances include incentive, ownership (of the energy-using assets) and access to investment funds. Low-income homeowners tend to have an incentive to invest in EE (future bill savings) and ownership of the energy-using assets, but not the access to funds. Low-income private tenants who pay their own energy bills have the same incentive but no ownership or funds. A split incentive barrier is in effect. Social housing can align all three circumstances when energy bills are paid collectively. The investor, beneficiary and owner may be the same agency. Administrative efficiencies may be achieved by a single decision that applies to many units. Costs are typically lower for bulk purchasing. One way to overcome this barrier is through the establishment of minimum standards. In particular, energy efficiency standards for affordable housing could be effective.

²⁶ http://www.acto.ca/english/acto_content.php?topic=6&sub=38

²⁷

[http://www.lowincomeenergy.ca/A55AB4/lien.nsf/235a6bfd2d43c5d085256f8500649642/b932a7785ad505b185256fc100533dc6/\\$FILE/DSM%20for%20low%20income%20consumers%20in%20Ontario.pdf](http://www.lowincomeenergy.ca/A55AB4/lien.nsf/235a6bfd2d43c5d085256f8500649642/b932a7785ad505b185256fc100533dc6/$FILE/DSM%20for%20low%20income%20consumers%20in%20Ontario.pdf) Sec 4.1

²⁸ For example 65% of US Low-Income Housing Energy Assistance Program (LIHEAP) recipients use cold water wash and 44% have a compact fluorescent lamp, significantly more than the national average www.liheap.ncat.org/nlic/Sevel.ppt

- An example of the need to differentiate among ownership circumstances may sub-metering. Sub-metering is typically considered an effective conservation measure, as it charges all incremental consumption to the account of the user. However, it has been argued that sub-metering is not an effective policy for multifamily rental buildings.²⁹ In the case of multifamily low-income rentals, sub-metering may deter EE investment by transferring the price signal from the landlord, who is capable of both implementing and financing EE, to the tenant, who cannot do either. The cost of sub-metering may be a substantial fraction of the bill, which may be borne by the tenant, and has little to no conservation effect.³⁰

²⁹ Submetering replaces a building-wide meter with apartment meters, so that individual units can be billed based on their actual consumption. “We believe that proceeding with Smart Meter initiative and electricity sub-metering in the multi-residential rental sector is a flawed conservation strategy that will significantly decrease, not increase, incentives to save energy in the multi-residential rental sector.” ACTO [Advocacy Centre for Tenants Ontario], Presentation to Bill 21 public hearings, Justice Policy Committee, Feb 3 2006.

³⁰ http://www.acto.ca/docs/LR_Electricity_ZappingTenants_FullReport.pdf In Ontario, most multifamily buildings are gas-heated, so electricity submetering applies to small loads in any case.

5. LOW INCOME EE PROGRAM EXAMPLES

The examples below are intended to be representative, not exhaustive.

United Kingdom: The UK Fuel Poverty Program³¹ flows from the *Warm Homes and Energy Conservation Act* of 2000. “Fuel poverty” is defined as expenditure of more than 10% of disposable income (after tax and major payments) on energy needs. The first program objective is to eliminate fuel poverty in vulnerable households — defined as those containing children or occupants who are elderly, disabled or who have a long-term illness — by 2010. In 2000 there were 3 million such households, about 85% of all the fuel poor in the UK. The program also covers fuel-poor healthy adults, and has a longer term objective to eliminate all fuel poverty.

Program measures are classified into energy efficiency measures, energy market measures and social inclusion measures. Programs differ among England, Scotland Wales and Northern Ireland, and are delivered in many ways, through partnerships among federal departments, and with local and housing authorities, utilities and specified delivery agencies. The program references policies in the areas of climate change, social equity and health. Three examples in the EE area include:

- *Warm Front* is the main tool for tackling fuel poverty in the private sector in England. From the introduction of the Scheme in June 2000 to the end of December 2005, over 1.1 million households received assistance.³² Funding over the 2005-08 period will amount to £800 million. The Warm Front grant of £2,700 - 4,000 may cover: loft insulation, draught proofing, cavity wall insulation, hot water tank insulation, gas room heaters with thermostat controls, converting a solid fuel open fire to a modern glass fronted fire, timer controls for electric space and water heaters, energy advice and two low energy light bulbs.³³ The audit, advice and installation are at the government’s expense.³⁴
- Under the *Energy Efficiency Commitment* (EEC), electricity and gas suppliers are required to meet targets for the promotion of improvements in household energy efficiency in Great Britain, based upon the number of customers they have. The EEC requires suppliers to achieve at least 50 per cent of energy savings from a Priority Group of low income consumers.³⁵
- The *Community Energy Programme* provides grants to support installation and refurbishment of community energy systems across the UK. The program targets 100,000 people on low incomes.³⁶

³¹ <http://www.berr.gov.uk/files/file16495.pdf> The Fuel Poverty Program was launched in 2001.

³² <http://www.berr.gov.uk/files/file29688.pdf> p. 11

³³ http://www.direct.gov.uk/en/Bfs11/BenefitsAndFinancialSupport/DG_10018661

³⁴ “In some cases [the customer] might have to pay towards the work but wherever possible, the scheme will try to cover these costs” http://www.direct.gov.uk/en/Bfs11/BenefitsAndFinancialSupport/DG_10018661

³⁵ <http://www.berr.gov.uk/files/file26037.pdf> p. 14

³⁶ Ref. note 37 p. 15

Canada: The federal government's *ecoENERGY Retrofit* program does not differentiate low-income households.³⁷ However, there is capacity in the program to facilitate low-income programs operated by provinces or others that allow retrofit incentives to be recovered by delivery agents, not just directly by the homeowner, allowing delivery agents to recover their costs in conjunction with the federal incentive.

Nova Scotia replaced its *Keep the Heat* program in the 2006/07 budget with a Household Energy Rebate that provides an average of approximately \$200/year to an estimated 400,000 households, regardless of family income. (*Keep the Heat* offered a cash rebate of \$100-250, depending on heating fuel, for families with net annual incomes under \$25,000 and for single people with net annual incomes under \$15,000.³⁸)

In November 2006, the New Brunswick Department of Families and Community Services partnered with Energy Efficiency New Brunswick to initiate a \$5.3 million, province wide low-income EE program. The program provides no-cost energy audits and non-refundable grants of up to \$4,500 for basic energy efficiency measures.³⁹

Hydro-Québec, l'Agence de l'efficacité énergétique, Gaz Metro and the City of Montreal will provide EE assistance for social housing that meets the *Novoclimat* certification. For example, Gaz Metro will provide grants of 75% of the additional initial cost, plus a zero-interest loan for the remainder.⁴⁰

In Ontario, there are several programs offered by either the Ontario Power Authority, or by natural gas and electricity Local Distribution Companies (LDCs). These programs have an aggregate \$33.5 million in funding.⁴¹ Two examples are:

- The Low-Income and Social Housing Directive has a goal to reduce electricity consumption by 100 megawatts (MW), the amount used by about 33,000 homes. The \$2.9 million pilot program, targeting as many as 1,400 private single, semi-detached and row houses in 16 communities across the province, will provide both homeowners and tenants with energy audits, education programs and upgrading or replacement of inefficient appliances and equipment.⁴²
- Enbridge (Ontario) has an enhanced TAPS (Thermostats, Aerators, Pipewrap and Showerheads) program for low-income households. The Enhanced TAPS program

³⁷ The previously-announced *Energuide for Low-Income Households* was to have provided \$500 million for financial assistance of between \$3,500 and \$5,000 to low-income households (\$1,000 and \$1,500 per unit in multi-unit buildings) to defray the cost of measures such as draft-proofing, heating system upgrades and window replacement.

³⁸ <http://www.gov.ns.ca/finance/budget06/HouseholdEnergyBulletin.pdf>

³⁹ <http://www.gnb.ca/cnb/news/fcs/2006e1101fc.htm>

⁴⁰ <http://www.aee.gouv.qc.ca/habitation/support/logements/logements-sociaux-financiere.jsp>

⁴¹ Mary Todorow, Low-Income Energy Network, pers. comm.

⁴² <http://www.conservationbureau.on.ca/Page.asp?PageID=924&ContentID=1707>

provides installation of a programmable thermostat, foam pipe insulation, and energy efficient showerheads and aerators for kitchen and bathroom faucets.⁴³

The Manitoba *Low Income Energy Efficiency Initiative* (LIEEI) plans to retrofit almost 12,000 public and private buildings occupied by low-income families.⁴⁴ For one project, Manitoba Hydro has partnered with the provincial government, the Community Education and Development Association, the Centennial Community Improvement Association, Building Urban Industries for Local Development (B.U.I.L.D.), the United Way, the Winnipeg Foundation, and the Winnipeg Partnership Agreement to bring Power Smart to 120 rental and owner-occupied low-income households.⁴⁵

In BC there are pilot low-income EE projects through the *Energy Savings Plan*⁴⁶ and BC Housing.⁴⁷ The *First Nation and Remote Community Clean Energy Program* has allocated \$3.9 million of Provincial funds to clean energy and is supported by the federal Opportunities Envelope.⁴⁸

The experience in both the UK and Canada suggests that with multiple drivers and diverse policy interests, it can be hard to determine who is best placed to lead new initiatives. Thus, there is a strong case for collaborative efforts. In particular there is a good case for collaboration between agencies focused on energy and those focused on health and welfare and between federal and provincial levels of jurisdiction.

⁴³ <https://portal-plumprod.cgc.enbridge.com/portal/server.pt?space=CommunityPage&control=SetCommunity&CommunityID=587>

⁴⁴ <http://www.gov.mb.ca/greenandgrowing/growing.html>

⁴⁵ http://www.hydro.mb.ca/powersmartnewsletter/ps_newsletter_2007_spring.pdf

⁴⁶ <http://www.saveenergynow.ca/bcenergyplan>

⁴⁷ <http://www.bchousing.org/programs/sustainability/conducting>

⁴⁸ http://www2.news.gov.bc.ca/news_releases_2005-2009/2007EMPR0014-000354.htm

6. KEY MESSAGES

- Energy affordability is a problem that creates unique and critical risks for low income families. Energy efficiency can play a vital role in eliminating energy poverty and improving the social and economic well-being of these families at risk.
- Energy efficiency programs directed at low-income households can have multiple policy (and human welfare) benefits.
- However, with multiple drivers and diverse policy interests, it can be hard to determine who is best placed to lead new initiatives. Thus, there is a strong case for collaborative efforts.
- Low-income households are less likely to undertake energy efficiency investments in the absence of programs and are therefore less likely be free riders.
- Energy departments at the federal and provincial levels should develop a joint strategy with agencies focused on health and welfare.
- Elements to include in an energy affordability strategy might include:
 - A review of existing social programs to identify opportunities for energy efficiency
 - Energy efficiency standards for affordable housing
 - Joint funding from ratepayers and taxpayers for energy efficiency investments