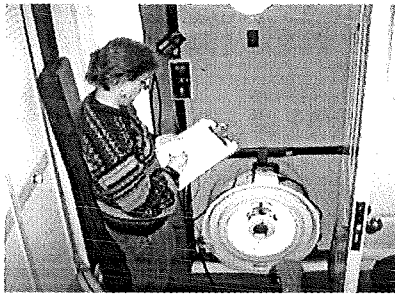


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# Proposal for a Canadian Low Income Energy Efficiency Program (LIEEP)

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RURAL ET VILLAGES VERTS

Green  
Communities

## Introduction

The recent increase in the cost of home heating has renewed concerns about the additional financial burden that will be placed on low-income households in Canada. Low-income households are particularly affected because they tend to live in housing stock that is in poor condition and which has higher energy consumption than the average house.

In response, the federal government recently began to provide relief from higher heating expenses to those who need it most in the form of a tax rebate (\$125 or \$250 per person). While this one-time offer will be of some assistance to low-income households faced with higher heating bills, it will not address the problem over the long term.

Improving the energy-efficiency of low-income housing stock is a cost-effective alternative which will help low-income households deal with future energy costs and which will also have other economic, social and environmental benefits.

This document proposes that the federal government fund a Canadian Low Income Energy Efficiency Program (LIEEP) to assist the low income sector with long term solutions to higher energy costs, including improving the energy efficiency of the low income housing stock. The proposal was prepared by Équiterre, Vivre en ville and the Green Communities Association, organizations active on social and environmental issues. It has been reviewed by the Helios Centre, an independent firm of energy consultants, which analysed the economic, environmental and employment impacts that would accrue from a Canadian LIEEP.

The Helios report concludes that, from an economic point of view, LIEEP is a more effective poverty reduction policy tool than a tax rebate. Because energy savings generally last many years, the economic benefits to low income Canadians will be greater than a one-time payment. For every dollar spent by the government on LIEEP, Helios estimates that participants will save two.

## Proponents

### **Équiterre ([www.equiterre.qc.ca](http://www.equiterre.qc.ca))**

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Active since 1993, Équiterre (from the French words for equity and the earth) is a non-profit organization based in Montreal. Its mission is to promote ecological, socially just choices. Équiterre is active on the following issues: fair trade, local and organic food, ecological transportation and energy efficiency. Its scope of action is mainly Quebec, but it offers residential energy efficiency services mostly in the Greater Montreal area. Équiterre is an EnerGuide for Houses agent with the Energy Efficiency Agency and has provided training to groups across Quebec who deliver the low-income energy efficiency visits funded by the same Agency.

### **Vivre en ville ([www.vivreenville.org](http://www.vivreenville.org))**

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Vivre en ville (which means, "City living"), was founded in 1994 by a coalition of groups and individuals who believe in developing sustainable cities and villages. Although its scope of action is

the province of Quebec, many of its projects have been locally based in the Quebec City area. Vivre en ville has organized international and local conferences on sustainable communities and regularly offers testimony on various development projects, proposed bylaws, bills and public policy. It offers energy efficiency services to low income households in the Quebec region and has also been involved in promoting non-profit housing.

**Green Communities Association (GCA) ([www.gca.ca](http://www.gca.ca))**

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The Green Communities Association (GCA) is a national umbrella organization of non-profit, community-based environmental service organizations. The mandate of GCA is to build sustainable communities through resource conservation, pollution prevention and the adoption of ecologically sound practices.

The GCA was established in 1995 to facilitate information exchange and co-operation among members and to develop shared approaches, common standards and new programs and services. GCA is a delivery agent for EnerGuide for Houses under license with Natural Resources Canada.

## **Need and rationale for the program**

### **Affordability of energy**

Energy, including that required for heating space and water, cooking, refrigeration and lighting is an essential service and represents a significant portion of the cost of housing. Over the past two years the cost of energy, especially heating fuels, has risen dramatically in Canada.

In Quebec, for example, the price of heating oil increased from 29 cents per litre during the 1998-1999 winter to 52 cents in January 2001, an increase of 79 per cent. In Ontario, Enbridge Consumers Gas' Supply Charge has doubled from approximately 12 cents per m<sup>3</sup> in October 1999 to more than 24 cents per m<sup>3</sup> in January 2001. A typical residential heating and water customer in Ontario will pay \$500 more for natural gas in 2001 than in 1999.

This rapid increase in energy prices, especially relating to heating fuels, is particularly burdensome for low-income households who sometimes must choose between paying energy bills or buying food. Indeed, every year Hydro-Quebec must cut power to over 30,000 low-income households who are unable to pay their bills and food banks have been reporting an alarming increase in clients throughout the 90s and into the new decade.

The increase in energy costs further impacts low-income households because of the poor quality of buildings in which they live. Typically, low-income households live in older buildings that have not been well maintained. These buildings tend to be drafty, with low insulation levels, poor quality windows and doors and inefficient heating systems. As a result, the heating bills of low-income households are often higher than those experienced by the average Canadian household.

A Canadian LIEEP would address the issue of affordability of energy by helping low-income households reduce their energy costs by up to 20 per cent. By improving the condition of older residential building stock, the LIEEP would also make a contribution to the problem of affordable

housing: the Federation of Canadian Municipalities (FCM) has identified housing rehabilitation as a key strategy to address the issue of affordable housing .

### **Environmental issues**

Climate change and air pollution are now major issues in Canada and around the world. By reducing fossil fuel consumption, LIEEP would make a contribution towards reducing air pollution in urban areas, as well as reducing greenhouse gas emissions which cause climate change. Indeed, the Buildings Table Options Report, Residential Sector, generated by the multi-stakeholder National Climate Change Action planning process recommended that measures be taken to target emissions in low-income households. According to the Helios evaluation, LIEEP would result in total greenhouse gas emissions reductions of 4 million tonnes of CO2 equivalent.

Other environmental benefits would include a reduction in water consumption and improved indoor air quality.

### **Economic spin offs**

A national LIEEP would stimulate sales for Canadian suppliers of energy-efficient products and services and create employment for residential contractors who install energy-efficiency measures. Helios estimates that a national LIEEP program would result in a net gain of 7 300 to 13 100 person-years of employment.

## **Experience elsewhere**

Experience in other jurisdictions indicates that delivering energy efficiency programs to the low-income sector is an effective means of helping this group deal with energy bills.

### **United States**

In the US, the federal government has funded low-income energy efficiency programs since the early 70s. Programs vary from state to state. Services offered by the various programs include weatherization, thermostat installation, rebates for efficient appliances such as refrigerators, energy education, budget counselling as well as other services.

In 1992, the efficiency of various services was evaluated in a project called the Niagara Mohawk Power Partnership Pilot . The Pilot concluded that participants who received weatherization services could save up to 16 per cent of their heating bills while others who received weatherization, programmable thermostats and education saved up to 25 per cent of their heating bills.

We have analysed various US low-income programs . In general we find that successful programs include:

- community-based delivery agents;
- a strong educational component;
- an approach that encompasses various energy uses: air and water heating, appliances and lighting;
- weatherization and weatherstripping in cold climate environments.

The Canadian LIEEP program is designed with this learning in mind.

## **Quebec**

With the encouragement of low-income, consumer and environment advocacy groups, Quebec now has a modest education and weatherstripping program specifically targeting the low-income. In 1996, the program started out as a two-year pilot project conducted by Hydro-Quebec, Option consommateurs and the Service d'aide au consommateur with 4,000 low-income participants. The results of the pilot were evaluated by an independent firm and a report of that pilot was published (in French) by Option consommateurs. Following these reports, in 1999, the Quebec Government mandated its Energy Efficiency Agency to fund a small three-year program with a budget of \$3 million. The program, delivered by community groups, is now in its second year and demand has consistently surpassed the capacity of the groups. Only a fraction of low-income households in Quebec have received the services. Participants save about 5 % of their total energy bills, savings that last between 5 and 10 years, excluding the educational component.

## **Ontario**

In Ontario, Green Communities in Peterborough, London, Ottawa and Toronto have successfully conducted energy efficiency projects targeting the low-income households. These programs have focussed mainly on air leakage control and have resulted in average household energy savings of 10 to 20 per cent.

## **Services to be delivered**

The proposed Canadian Low-income Energy Efficiency Program (LIEEP) would reach approximately 645 000 households with a menu of services that have been designed to meet the needs of a variety of occupancy scenarios. The services to be offered are based on the Quebec program experience and other Canadian programs, as well as the US experience. The objective is to reach a large number of households while implementing the most cost effective measures available. A description of services follows. Each participant would receive at least measure "A" or "C". Some participants would also receive measure "B" and "D".

The measures proposed are part of an interdependent package and should not be regarded as measures to be offered independently. For example, a programmable thermostat will do little to improve efficiency in a home with no insulation or if the occupant has no idea how to use it. We therefore strongly suggest that LIEEP be adopted as a complete package.

### **A) Education and weatherstripping**

This measure combines, during a customised home visit, a sit-down discussion with participants regarding their energy consumption habits, a professional visual analysis of major problem areas within the home, verbal and written suggestions on how to reduce home heating costs and increase comfort levels, installation of low-flow shower heads and aerators and implementation of a series of on-site, low-cost weatherstripping measures throughout the dwelling. These visits will last roughly two hours each, and will be conducted by a team consisting of one technician for installation of weatherstripping and one energy efficiency counsellor. This measure serves as the "entry point" for 430,000 low-income tenants and 96,750 low-income homeowners. This measure is the only service offered in the Quebec Program. It is most efficient in reaching a large number of participants since technical and promotional barriers are very low. We estimate that

participants who receive only this measure would save about 10 per cent of their heating bill, savings that would last six years. Savings on non-heating energy bills (appliances, lighting, etc) which will occur have not been evaluated.

### **B) Electronic programmable thermostat**

In order for this measure to be effective and attain the proposed savings, it is presumed that participants will have received a first educational visit (A or C). The installation of programmable thermostats without measure A or C has previously proven to be ineffective.

The measure consists of the professional installation of electronic programmable thermostats, combined with on-site training designed to ensure proper use of the equipment. This measure is destined to reach half the participants of the program. In order for this measure to be efficient, studies have shown that education must be included. Without education, a programmable thermostat may face the same destiny of VCR clocks left flashing for years! To be eligible to this measure participants will need to have non-programmable wall thermostats and possibly obtain the consent of their landlord. 322,500 households would benefit from this measure. Each household would save about 10 per cent of their heating bill, savings that have a estimated lifetime of 15 years. These savings are based on the Hydro-Québec experience with electronic but non-programmable thermostats as well as on the Niagara Mohawk Power Partnership Pilot. Again, as an independent measure, without the education and in some cases weatherization, the installation of programmable thermostats would not reap the same benefits.

### **C) EnerGuide for Houses and weatherstripping**

This measure is the entry point for low-income homeowners. It includes an EnerGuide for Houses audit. EnerGuide for Houses is an advanced evaluation system developed by Natural Resources Canada that measures the energy performance of houses and makes recommendations to improve energy-efficiency and home comfort. The measure also includes the installation of low-flow shower heads and aerators and implementation of a series of on-site, low-cost weatherstripping measures throughout the dwelling. 107,500 households would benefit from this measure which would result in immediate savings of about 10 per cent of the heating bill for six years. In fact, savings would be greater since it has been demonstrated that the majority of homeowners who receive an EnerGuide for Houses visit initiate further renovations on their own. However, since no statistics are available for low-income homeowners, we have remained conservative in our estimates.

Finally, this measure is linked to measure D. It would make no sense to offer EnerGuide for Houses to low income homeowners without offering subsidies to implement the recommendations of the visit.

### **D) Weatherization**

This measure offers significant long-term improvements to the homes thermal envelope by providing extensive weatherization services (insulation in the basement and attic as well as comprehensive air leakage control of the house) free of charge. This will be offered to the 53,750 most inefficient homes identified by the EnerGuide for Houses evaluation.

## Delivery details

### Participants

Statistics Canada estimates that about 17 per cent of Canadian households are low-income. Although this is not meant to be a poverty line, it is generally regarded and used as one. However, many community and some public agencies consider the poverty line to be higher than the low-income definition of Statistics Canada. In Quebec, the Energy Efficiency Agency has used 130 per cent of the low-income level defined by Statistics Canada for its eligibility criteria. Also, the recent energy rebate of \$1.3 billion for 2001 was paid out to Canadians eligible for a GST rebate. This represents eight million Canadians or 4 million households and is very similar to the level used for the Quebec program. It is this level that we propose should be used in LIEEP.

Based on existing programs, and with a potential of four million, we estimate that 645 000 households will participate, which represents 15 per cent of the total population. **Only low-income Canadians who pay energy bills would be eligible for the service.**

### Involvement of private landlords, co-ops and public housing

Since our proposal includes the installation of thermostats, non low-income landlords will need to be involved when their tenants are eligible, at least to consent to the work being done (the education and weatherstripping does not necessitate the consent of a landlord). Although this is not included in our proposal, the potential for non low-income landlords with low-income tenants to participate in a weatherization program should be evaluated in the first two years of the program. A particular attention will also have to be given to rent control. Both tenants and landlords will need to be informed that the work being done should not, and at least in some provinces, legally cannot, be used to justify rent hikes.

The participation of public housing authorities in LIEEP should also be evaluated in the first two years of the program. Additionally, members of housing co-ops that are low income should be allowed to participate in the program whether they pay their heating bills individually or collectively. However, certain criteria would need to be developed and adapted to their particular situation.

### Program administrator

The Office of Energy Efficiency (OEE) could play a national role as funder. A national committee should be established to administer the program. This committee should be comprised of various partners in the program including the Green Communities Association, local non-profit community service providers as well as other actors like the Energy Efficiency Agency of Quebec. Regional agencies may be required to play a co-ordinating role between the national committee and local service providers. The administration of the program would include overall management, administration, program design, training, quality control/quality assurance, monitoring and evaluation.

### Delivery agents

It is proposed that community-based not-for-profit groups be the key delivery agents for the services. Community-based groups who currently deliver programs such as EnerGuide for Houses and the Quebec low-income program have proven themselves to be effective delivery agents who can mobilize the support of their local communities. This is also the experience in the US where

not-for-profit groups have proven very effective as delivery agents. They are cost-effective and driven by the social and environmental impacts of the program.

Community-based groups are also excellent at creating local partnerships that can assist in marketing and delivery, including identification of target clients. Finally, these groups are usually well positioned to offer a wider array of services, including referrals to health and social services, which has proven to be an important spin-off of the Quebec program.

There are currently about 25 community groups across Canada that could deliver the program. Over the first two years of the program, another 20 groups would be trained to reach all regions of the country.

### **Liability**

Liability will be mitigated through the establishment of a training program for delivery agents and contractors and through a quality control and quality assurance protocol that will be overseen by the program administrator.

In addition, delivery agents will be required to carry Error and Omissions and General Liability Insurance that includes the federal government as named insured.

Finally, the program will need to consider laws and bylaws which restrict certain acts to recognized associations as is the case with the installation of the thermostats which is an act that must be accomplished by a certified electrician in Quebec.

### **Potential partners**

Once the LIEEP program is established, there will be an opportunity to attract key partners that could provide additional in-kind or financial support. Potential partners include provincial governments, which are already beginning to introduce low-income energy rebates, and utilities that have an interest in helping their customers become more energy efficient. Other potential partners include municipalities, churches, and social housing providers.

### **Timeline**

It is proposed that the LIEEP be "piloted" in selected communities in year one, then rolled out progressively over an additional seven-year period. In total, 645,000 households will be impacted.

Year	2002	2003	2004	2005	2006	2007	2008	2009
Number of households	15,000	30,000	60,000	100,000	110,000	110,000	110,000	110,000

If the government is not ready to commit to a multi-year program, a two-year pilot should be commissioned. Preliminary results could then be used to fine-tune delivery details before launching a multi-year program.

### **Cost**

The total cost of the program would be about \$347 million or an average of \$43 million per year. This does not include the cost of administration, training and promotion. The cost to launch and operate a pilot is approximately \$10 million a year.



## **Benefits**

The Helios Centre was mandated to model the likely economic, environmental and employment impacts of a LIEEP. The main conclusions of their report are as follows:

- LIEEP would be a more effective policy tool to reduce poverty than a tax rebate. Because energy savings generally last many years, the economic benefits to low-income Canadians would be greater than a one-time payment. For every dollar spent by the government, participants would save two.
- Participants will experience lifetime energy bill savings of between \$848 and \$1,198.
- Pollutants responsible for urban smog would be significantly reduced. Also, greenhouse gas emissions would be reduced by 4 million tons over 20 years. This represents about 5 per cent of annual emissions from the residential sector.
- LIEEP would result in a net gain of between 7,300 and 13,000 person-years of employment.

## **Recommendations**

- 1) That the Government of Canada fund a national Low-income Energy Efficiency Program to assist low-income households in dealing with long term energy bills.
- 2) That the government budget \$10 million a year for a pilot program to be launched in selected Canadian cities in the fall of 2001. The pilot would be used to finalize program design, establish program delivery parameters, develop training needs, etc. The pilot would last two years.
- 3) That the government budget for an additional annual expenditure of \$30 to \$50 million for seven years to fund a progressive rollout of LIEEP.
- 4) That the program be funded through the OEE and administered by a national committee comprised of various partners in the program including the Green Communities Association, local non-profit community service providers as well as other actors like the Energy Efficiency Agency of Quebec.
- 5) That non-profit community-based organizations be the key service providers for the program.