

Fighting Energy Poverty in the Transition to Zero-Emission Housing: A Framework for BC

Summary

Climate action demands that jurisdictions like British Columbia reduce and eventually eliminate greenhouse gas emissions (GHGs) from burning fossil fuels. For BC's housing stock, this means shifting away from natural gas for space and water heating in favour of clean electricity, and building homes that are dramatically more energy efficient.

But efforts to reduce GHGs from residential buildings need to be carefully designed to prevent adverse impacts on low-income households. Higher costs associated with new green electricity supplies, re-investment in electricity infrastructure and energy conservation all point to rising prices over the coming years. A shift away from fossil fuels in both buildings and transportation may exacerbate this situation, leading to greater demand for electricity.

Higher electricity prices are thus an important political and social issue, with potential to deepen poverty in BC unless well-designed policies are implemented that take equity considerations into account. This report highlights two major concerns:

- Rate increases from BC Hydro can exacerbate *energy poverty*, which exists when households have to spend a disproportionate amount of their income just to meet basic energy needs, especially necessities like home heating.
- Current energy efficiency retrofit programs mainly benefit affluent homeowners in single-family housing, not low-income people, who tend to be renters, or those who live in multi-unit buildings.

This paper looks at electricity conservation and pricing policies through the lens of energy poverty, and makes recommendations for a comprehensive approach that would both reduce GHG emissions and improve quality of life for all British Columbians.

Download the full report
at policyalternatives.ca/energypoverity

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ENERGY POVERTY IN BC

While BC has low electricity rates compared to other jurisdictions, it also has among the worst records on poverty in Canada. A report for the Ministry of Energy, Mines and Resources estimated that 18% of BC households lived in energy poverty in 2005. Energy poverty can lead to respiratory, cardiovascular and other health problems caused by cold, dampness or mold, and preventable winter deaths.

Low-income households are more likely to have housing or appliances that are not energy efficient, and are most in need of retrofits that would conserve energy and also improve health and quality of life. On the other hand, wealthier British Columbians are more likely to live in homes that are already more efficient, and have enough capital to invest in upgrades without needing government subsidies.

Household energy expenditures display a regressive pattern, meaning lower-income households spend a greater share of their income on energy:

- The bottom 20% of households spent 5% of their total income on energy in 2009, and 3% of income just on electricity.
- Households in the top 20% spent only 1.5% of their total income on energy, and less than 1% on electricity.

Without measures to deliberately offset the impact of higher prices or to make retrofit programs more accessible, energy poverty will inevitably rise. This is unfair and may even be politically counter-productive if it provokes a backlash against climate action.

ELECTRICITY RATE INCREASES

In 2008, BC Hydro implemented a new two-tier pricing structure designed to encourage electricity conservation, and also began to increase rates. In early 2011, BC Hydro proposed to raise rates even more substantially. While a BC government review has led to smaller price hikes over the next couple of years, rate increases will still have a much greater impact on low-income households:

- Households with incomes under \$20,000 will see electricity bills rise from 3.6% of income in 2008/09 to 4.3% in 2013/14.
- Households with incomes over \$150,000 will not likely notice their bills rise from 0.4% of income in 2008/09 to 0.5% in 2013/14.
- Beyond 2014, rate increases are likely to continue. Under BC Hydro's proposed plan in Winter/Spring 2011, low-income households would spend 6.3% of their income for the same amount of electricity in 2017/18.

BC Hydro's two-tier conservation pricing system (Residential Inclining Block), in which rates increase after a certain level of consumption, has had a beneficial but small impact for low-income households:

- Households with incomes under \$20,000 saw their electricity bills drop by \$29 per year on average.
- Households with incomes over \$150,000 saw their bills increase by \$78 per year.



Without measures to deliberately offset the impact of higher prices or to make retrofit programs more accessible, energy poverty will inevitably rise. This is unfair and may even be politically counter-productive if it provokes a backlash against climate action.

BC Hydro is also installing smart meters in BC homes by the end of 2012. Smart meters allow BC Hydro to better manage the electricity system, and will likely lead to time-of-use (TOU) pricing structures that make electricity more expensive during peak periods. However, they are likely to have little benefit for low-income households. The \$1 billion in funding for smart meters would have been better used to invest in programs for energy conservation.

ENERGY EFFICIENCY PROGRAMS AND LOW-INCOME HOUSEHOLDS

Well-designed household energy efficiency programs can help reduce energy poverty, but current programs in BC are aimed at single-family homeowners. With few exceptions, existing programs are not relevant to low-income households:

- Low income households do not have the upfront capital for upgrades.
- Energy efficiency programs are not generally available for multi-unit residential buildings where many low-income households live.
- Some 30% of BC households rent their housing, and face barriers to energy efficiency upgrades.

Low-income energy efficiency programs are “low-hanging fruit” that can yield relatively greater energy savings than mainstream energy efficiency programs because low-income households live in less energy-efficient homes than the average household.

Because low-income households are already budget-constrained, and would not have made investments otherwise, there is good reason to believe that targeted and well-designed programs for energy efficiency in low-income households would dramatically reduce two common problems with efficiency programs: free rider effects (public subsidies going to households who would have made investments anyway) and rebound effects (where savings are offset by increased energy use).

KEY RECOMMENDATIONS

A smooth transition to zero-emissions housing requires more attention to be paid to impacts on low-income households and other vulnerable populations, as well as the housing stock where they live. This should be a key component of a next generation LiveSmart program for BC, and it should also be linked to green job creation and skills development.

- **FIGHT ENERGY POVERTY** – If electricity price increases are necessary, low- to middle-income households should receive an income transfer to ensure that the most vulnerable are not worse off. There is also significant potential to address energy poverty through targeted low-income energy efficiency programs.
- **INCREASE THE PROGRESSIVITY OF TIERED PRICING** – Higher rates in the second tier of pricing will create stronger incentives for conservation and efficiency among high-income consumers, while having minimal impact on low-income households. For low-income households that are adversely affected due to their circumstances, a cap on electricity expenditures as a share of income (at say 5% of total household income) could be considered.



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A provincial fund is needed to support energy efficiency projects across rental properties, multi-unit buildings and the non-profit housing sector, to fund “deep retrofits” and renewable energy, currently missed by most existing utility and government incentive programs.

- **MANDATE ENERGY AUDITS AND TARGET OLDER HOUSING STOCK** – Eventually all housing in BC should have a completed energy audit, with the results available in the public domain. This process should start with the oldest housing stock, plus audits of all homes at the time of sale or during major renovations. BC’s older housing stock has poorer energy performance and higher GHG emissions, with homes built before 1983 worse than the provincial average.
- **RETROFIT MULTI-UNIT BUILDINGS AND RENTAL HOUSING STOCK** – A provincial fund is needed to support energy efficiency projects across rental properties, multi-unit buildings and the non-profit housing sector, to fund “deep retrofits” and renewable energy, currently missed by most utility and government incentive programs.
- **ACCELERATE FINANCING REFORM** – Financing through the public sector can also ensure credit is available to low-income households, landlords and others. A key dimension to this is for BC Hydro or governments to pay for cost-effective upgrades up front and link repayment to the property rather than the occupant.
- **ESTABLISH PROGRESSIVELY HIGHER MINIMUM STANDARDS FOR APPLIANCES AND BUILDINGS** – Future changes to building codes must drive builders toward net-zero buildings and passive house standards. Progressively higher marketplace standards for energy efficiency of appliances should be set.
- **INVEST IN SKILLS DEVELOPMENT FOR GREEN JOBS** – An aggressive approach, as outlined above, would require planning and sequencing of retrofits in accordance with the availability of skilled labour. The associated needs for training, apprenticeships, etc. would need to be evaluated in line with the annual budget for retrofits.

We estimate that a budget of \$220 million per year, over 10 years, in support of retrofitting BC’s housing stock would lead to substantial reductions in GHG emissions and energy poverty in BC homes. Carbon tax revenues are an ideal source of public subsidies for such a program. This investment would lead to 12,000 direct green jobs per year (and total increase in employment of 20,000 jobs if we include indirect and induced job creation).

Our Climate Justice framework on household energy efficiency and energy poverty concludes that the household sector can reduce and eventually eliminate GHG emissions, although this will be a process that rolls out over a few decades, and must be integrated into longer-term land use planning for sustainability.



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Download the full report at policyalternatives.ca/energypoverty

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