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## **Breaking down barriers to residential energy efficiency**

A recent McKinsey study estimated that employing profitable energy efficiency measures (i.e. measures that actually pay for themselves) in US homes could reduce energy consumption by 28% by 2020. The savings are likely to be similar for Canadian homes. Many of the changes are straightforward, cheap and effective such as programmable thermostats, which were present in only 31% of Canadian households in 2007. The technology is available, and the savings are real. But the barriers to adoption are also real – lack of supportive regulations, lack of financial means, and lack of information.

There are, however, some potential solutions out there. The first is mandatory energy efficiency standards. The current National Building Code, which has been adopted by New Brunswick along with many other provinces, does not address energy efficiency and fails to incorporate a minimum level of insulation or thermal efficiency for windows. The first step would be to amend such building codes to address energy efficiency for new buildings. But new buildings only represent a small fraction of the dwellings in Canada – in fact only about 10% of all dwellings in Canada were constructed since 2000.

Rental units, representing over 30% of Canadian dwellings, also pose a unique challenge since the landlord/owner is not usually responsible for paying energy bills and there is no economic incentive for them to invest in the property to reduce the amount of energy being used. Typically, it is the tenant who is responsible for paying energy costs, and it is unlikely that they will be a renter long enough to realize any return on investment for energy efficiency upgrades.

To address both of these issues, we could require dwellings to meet energy standards at key events such as a sale, major renovation, or signing of a lease for rental units. These standards would be progressively tightened over time to ensure that the existing stock of housing in Canada is made progressively more and more energy efficient.

Unfortunately, as is often the case, those who could benefit most from improving energy efficiency in their homes are the same ones who are least able to afford it. After meeting household, energy, food and basic clothing expenses, the amount of disposable income available to low-income households is limited. Pulling together the money to spend on energy efficiency projects, even ones that offer substantial return on investment or backed by government tax breaks or rebates, is unlikely to happen.

An interesting approach to address this issue, being trialed in a number of jurisdictions, is a system known as 'Pay As You Save' or PAYS. Here, the utility pays for energy efficiency upgrades in houses and, using estimations and complex calculations, continues to bill the customer as though no change has been made. This continues until the savings pay off the amount invested by the utility, at which point

the savings are passed onto the consumer. This has obvious benefits for low-income households as they can now take advantage of energy retrofits to save money without ever having to increase their expenditure. These PAYS systems are tied to a dwelling, not an individual, so renters no longer need to be concerned about whether they will remain in the building long enough to recoup an investment – it is instead spread over all the tenants during the payback period.

A final way of effecting change in this area is by requiring the energy performance of all dwellings to be disclosed at the time of rental or sale. Sellers (or landlords) would be required to have their homes assessed and rated on a scale and present it to potential buyers (or renters) to allow them to make a decision. Energy assessments are becoming more common (subsidized through Efficiency NB), and this approach would just mandate that they must be conducted and provided to interested parties. And while this does not directly result in individuals making improvements to their homes, it should make inefficient homes more visible and less desirable and prompt investment to increase their value.

It's important to note that none of these approaches can be effective without enforcement, in the case of regulations; and trust in independent third party auditors, in the case of PAYS or energy assessments. But as governments and agencies strive to increase both accessibility and uptake of energy efficiency actions, tangible policies such as these have the potential to move us much further along the spectrum.

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