

**How and Where to Reduce Emissions:**

**Help Canadian Housing and Homeowners Continue to Lead the Way**

Housing is Canada’s leading sector in addressing climate change. Total GHG emissions from the housing sector have decreased 11% since 1990, even though the housing stock is much bigger now, having grown 38% since that time. Housing is responsible for only 6.3% of direct GHG emissions in Canada. And today’s typical house uses 37% less energy than a similar one built in 1990.

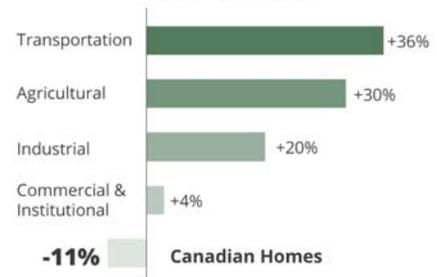
This significant progress has been accomplished through technology and systems innovation, voluntary adoption of higher standards of performance, and a uniquely Canadian research and development collaboration between the public and private sectors.

Those unfamiliar with the dynamics of the housing industry often, and erroneously, assume that continued improvement in housing energy performance requires more stringent building codes. This is neither how home energy performance has gotten to where it is today, as energy efficiency requirements have only been in the code since 2012, nor is it the key to dramatic GHG reductions in the future. Canada will continue to build more and more energy efficient homes, but savings there pale compared to the renovation market opportunity.

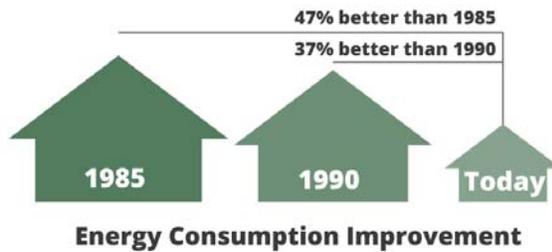
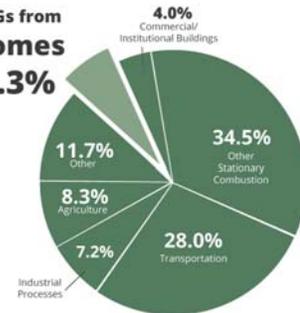
To continue achieving meaningful energy performance gains (and GHG emission reductions) in new housing requires ongoing innovation, voluntary programming and consumer energy literacy. Government and industry can continue to collaborate to continue this success story. To support innovation and protect affordability, increased code stringency is the last step, not the first.

Where the real opportunity lies for significant GHG emissions reductions is in the energy retrofiting of existing homes. It is policies that support energy efficient renovation of existing housing that offer the most significant significant opportunity to make big gains in housing energy performance while helping Canadians.

**Emissions Increases by Sector (1990 vs. 2012)**



**GHGs from Homes 6.3%**



Every dollar invested by homeowners in energy retrofits of the average existing home yields 4 to 7 times more energy savings than a dollar spent upgrading a new home. And half of Canadian houses were built before 1985, and this older half uses twice as much energy as the houses built since. The opportunity is therefore very large.



So how do we maintain this strong energy performance trend and address climate change, while protecting affordability and helping young Canadian families find a home that meets their needs at a price they can afford?

The Canadian Home Builders’ Association (CHBA) has the following recommendations to help Canadian housing and homeowners continue to lead the way in climate change action, to the benefit of homeowners, renters, and society as a whole. CHBA’s recommendations address opportunities and policies for new housing construction, renovation, community development, and smart transit investments.

**Opportunities**

- **Energy retrofits** offer by far the greatest energy savings potential, represent the most cost effective option, and deliver the best incremental improvements in terms of homeowner equity.
- The **EnerGuide Rating System** provides home energy information through its labels and reports to increase energy literacy, and should be used by all regional programs and mandatory labelling regimes as Canada’s single national home energy labelling system.
- **Voluntary programs in new housing (like ENERGY STAR and Net Zero)** enable homeowners to choose higher levels of performance. This approach supports innovation and provides market streamlining, ensuring that incremental costs are optimized and linked to homeowner benefits. Once firmly established, market-accepted, and cost optimized, higher levels of performance can be regulated, but not before. Given that new homes are already so efficient, and affordability is a challenge, additional incremental energy improvements need to be done without impacting affordability.
- **Ensuring that building codes and regulations do not undermine affordability** is critical to making sure that homeownership remains within reach of the next generation of Canadians in the middle-class and those aspiring to attain it. There are broad opportunities to develop technology that will improve energy performance without increasing housing costs, but this approach needs to be a public policy objective if it is to be achieved.
- **Infrastructure investment can reduce transportation GHG emissions related to development** if those investments are targeted to maximize ridership and yield the greatest environmental benefits of modal shifts in transportation.

**Policy Measures**

Based on the above, the following policy measures are recommended to seize the opportunity to help Canadian housing and homeowners continue to lead the way in climate change action:

1. Establish Renovation Tax Credits for Energy Retrofits.
2. Increase support to and promote the Government of Canada’s EnerGuide Rating System as the single national home energy rating system.

3. Increase support to the Government of Canada’s ENERGY STAR for New Homes program, and expand it to include high-rise, multi-family buildings.
4. Support work to address systemic barriers (e.g. community scale, market barriers, energy literacy) to Net Zero housing adoption.
5. Increase support to the Government of Canada’s Local Energy Efficiency Partnerships (LEEP) program and expand it to include energy retrofit technologies.
6. Ensure any increased building code requirements do not adversely impact housing affordability; and focus federal research in housing, both for innovation and in support of codes and regulations, towards performance improvements that keep construction costs the same or less.
7. Support the energy retrofitting of social housing.
8. Get infrastructure investment ‘right’ to support ridership through smart density and zoning, which is a key to ensuring that these investments maximize ridership and yield the full environmental benefits of a transportation modal shift to transit.

Each policy recommendation above is expanded upon in subsequent sections of this document below.

### **1. Renovation Tax Credits for Energy Retrofits**

Given the very significant opportunity to improve the energy performance of the existing housing stock, a permanent Renovation Tax Credit for Energy Retrofits, using the Government of Canada’s EnerGuide Rating System, should be introduced. Such an initiative supports the improvement of the housing stock, homeowner equity, affordability through lower operating costs, homeowner energy literacy (through labelling and custom home reports) and fighting the underground economy by requiring receipts.

Although misperceived as “expensive”, such a tax credit can actually be cost neutral, when the benefits of reduced revenue loss to the underground economy are included. Government receipt-based incentive programs have a proven record for suppressing underground economic activity. When the tax revenues gained from reduced underground cash activity are included in an assessment of such a program, and all of the socio-economic benefits are also tallied, a well-designed program can more than pay for itself.

### **2. Increase support to the Government of Canada’s EnerGuide Rating System**

For Canadians to make smart decisions about the energy performance of their homes, they need solid information. This allows them to compare one house to another when purchasing a home, and supports informed decisions concerning upgrade options when improving an existing home.

To achieve these outcomes, it is essential to increase support for the Government of Canada’s EnerGuide Rating System for homes, and to ensure that it serves as the single national home energy rating and labelling system for all Canadian homes.

Supporting a system that provides this information to Canadians is an important federal role, facilitating interprovincial harmonization and accelerating consumer energy literacy. Ongoing federal investment is needed to ensure all provincial, utility and other home energy programs in Canada can continue to use

this single national system, and that it continues to be developed and improved to provide additional information to Canadians as their energy literacy increases. This includes continued software systems support, training, and industry and advisor capacity building. Mandating national nutrition labelling on all food products has been a huge success and delivered significant benefits to consumers—we need to see the same approach in relation to the energy performance of homes.

With its national scope and capacity, the EnerGuide Rating System is uniquely suited to achieving this. It provides both a label reporting on current energy performance, as well as customized homeowner reports to guide homeowners in their energy upgrade decisions. It needs to be well supported.

### **3. Increase support to the Government of Canada’s ENERGY STAR for New Homes program, and expand it to include high-rise multi-family buildings**

The Government of Canada’s ENERGY STAR for New Homes program has been very successful in Ontario and Saskatchewan (where it began). This program has very high consumer recognition and, at its peak, over 20% of Ontarians who purchased a new homes chose ENERGY STAR. This type of voluntary market-driven program also stimulates innovation within the industry, ultimately reducing costs. And increasing consumer energy literacy puts a value on energy efficiency.

ENERGY STAR has changed the market and delivered real climate change action, all in a voluntary fashion without negatively impacting affordability. Indeed, its success made the introduction of energy requirements in the code in Ontario relatively seamless.

To continue the success of ENERGY STAR, the program needs additional resources to maximize its effectiveness and to properly, and successfully, continue its expansion into the other provinces.

Given the program’s success in the low-rise market, it is also important that the ENERGY STAR program be expanded to high-rise, multi-family buildings. About half of today’s residential construction in Canada consists of multi-family buildings, and making ENERGY STAR available in this form of housing will better address key market segments including first-time buyers and downsizers.

The Government of Canada currently has a call for proposals out for this initiative—it is important that this be followed through and that multi-family housing becomes an integral part of the program in the future.

### **4. Support work to address systemic barriers (e.g. community scale, market barriers, energy literacy) to Net Zero housing adoption**

The members of the Canadian Home Builders’ Association (CHBA) has always been at the forefront in pursuing increased energy efficiency in Canadian housing. This effort started with R-2000 homes over 30 years ago and continues today with CHBA’s Net Zero Energy Housing Council, and the Net Zero labelling program the Council is currently developing and piloting. Providing leading edge voluntary programming is key to advancing energy efficiency and supporting innovation in housing, while protecting choice and affordability. CHBA’s Net Zero initiative is leading Canadian energy efficiency not through code (which can degrade affordability), but through innovation and market transformation.

However, for Net Zero housing to gain a bigger share of the marketplace, there are many systemic barriers that need to be addressed, and the Government of Canada is ideally positioned to support work to address these. Collaborating with CHBA in this effort can accelerate the consumer literacy required to help new homebuyers make the smart choice and select the Net Zero option. Also required are efforts to bring Net Zero to the full community scale to address barriers like community planning for solar orientation, infrastructure changes, grid-interconnect challenges, achieving complete communities, addressing NYMBism, connecting to smart transportation systems, and more.

To take the next steps in energy efficiency in new homes requires successful market adoption of high performance homes without degrading affordability. In support of this goal, the Government of Canada should continue and expand its collaboration with industry to advance voluntary Net Zero technology, industry capacity, and consumer awareness.

##### **5. Increase support to the Government of Canada’s Local Energy Efficiency Partnerships program and expand it to include energy retrofit technologies**

One of the toughest challenges in getting new technologies broadly adopted in the marketplace lies in moving the industry and the marketplace beyond that which is technically proven. It requires ‘de-risking’ of innovations (including “working out the real kinks” in broader on-site applications) so that broader diffusion into industry and with consumers can take place. Moving innovations from niche status to the mainstream is often referred to as “crossing the chasm”. It is a ubiquitous challenge for which solutions are few and far between. However, in Canadian residential construction, there is a modest but very successful program by the Government of Canada which has achieved excellent results in overcoming this challenge—the Local Energy Efficiency Partnerships (LEEP) Program.

At present this program has very limited resources. To realize its full potential support needs to be increased and the Program expanded to include the greatest area of opportunity in the housing sector for GHG reductions—the renovation market.

LEEP is delivered on a regional basis and through engaging a critical mass of builders who are capable of identifying and incorporating product innovations that are best suited for their region. By working together through the LEEP initiative, supported by Government of Canada experts, builders use LEEP to reduce the time and risk involved in finding and applying innovations that result in better quality, high performance homes. In essence, LEEP makes the innovation cycle faster, less risky and more affordable. The information generated through LEEP projects is then shared with other builders in the region, accelerating market diffusion of the best proven technologies and innovations.

This approach to ‘Crossing the Chasm’ has been very successful and led to accelerated deployment of several important technologies from heating and cooling systems to insulation systems and more—now is the time to properly resource the program to achieve the climate change results the government seeks.

In addition, given that there are now more dollars spent each year on renovation than on new construction, and that the 50% of Canada’s housing stock built before 1985 uses twice as much energy as the homes built since 1985, LEEP needs to be expanded to also address innovation in the renovation sector.

The energy savings potential in renovation is much greater than in new construction, but the smaller enterprise size typical of the renovation sector, and the much greater variety of re-construction issues and challenges to be faced, makes diffusion of new technology more difficult. LEEP offers an excellent and proven approach to addressing these barriers and accelerating market adoption of renovation innovations. It is a uniquely Canadian success story that should be supported and expanded as part of the federal government's climate change strategy.

**6. Ensure any increased building code requirements do not adversely impact housing affordability; and focus federal research in housing, both for innovation and in support of codes and regulations, towards performance improvements that keep construction costs the same or less**

Given that home energy efficiency is largely about systems integration and the combining of many products, systems, and approaches to achieve desired results (and avoid unintended consequences), there is a clear role for federal research in housing. Much of this is non-proprietary and hence ideal for public sector support. There has been a long-standing collaboration between the federal government and the private sector in advancing innovation in housing, and in developing strong, responsible building codes and regulations.

However, much of the research funding to key Federal housing research players (NRCan, NRC and CMHC) has been cut over the years, and capacity to undertake key research has suffered accordingly. At the same time, many other factors like land-prices, municipal taxes, and other "new fundamentals" in the housing market have increased house prices rise dramatically, undermining affordability.

While the energy performance of Canadian homes has increased very significantly over time, this has primarily occurred through voluntary innovation, without damaging affordability. With Canada's new housing performing extremely well, it is of paramount importance that further improvements be supported by federal housing research in support of innovation as well as codes and regulations, but that these efforts focus on ensuring future performance improvements result in homes that cost the same or less. Support for energy efficiency research, innovation and related government-industry collaboration must place protection of affordability at the centre of decision making. We have done it in the past, we can continue to do it in the future, but only if this is made a priority.

**7. Support the energy retrofitting of social housing**

As the Government of Canada reinvests in Canada's "social infrastructure", supporting the energy retrofitting of social housing offers benefits to housing providers, tenants, and society as a whole.

**8. Getting infrastructure investment right to support ridership through smart density and zoning is key to ensure that the investments in infrastructure maximize ridership yield the full environmental benefits of transportation modal shift to transit**

Over the coming two decades, an estimated \$75 billion will be invested in rapid transit systems in urban regions across Canada. The potential to increase ridership in transit systems offers many benefits,

including addressing climate change. But these will only be realized if these systems and the surrounding communities are planned and developed properly.

Most new and expanded networks are routed directly through communities which now rely, overwhelmingly, on private automobiles for journeys to work. If implemented properly, modal shift to transit will occur; if not, continued reliance on automobiles, and the resulting congestion, deteriorating housing affordability, and other challenges will remain.

To achieve the substantial and meaningful GHG and other pollution reductions that are possible, coordination and planning of multi-governmental and private sector investments in rapid transit systems, coupled with widespread acceptance of the principles of transit-oriented development by Provinces and municipalities (who must also often overcome NIMBYism from their constituents), is required.

So the challenge remains: achieving actual integration of appropriate residential development with rapid transit systems. This requires a mix of innovative land-use policies such as pre-zoning, facilitative and market-based building regulations, and appropriate financing instruments.

CHBA estimates that there is a capacity for as many as 1 million transit-oriented housing units to be developed over 20 years within a 5 to 10-minute walk of existing or planned rapid transit stations, including 106,000 subsidized rental units, 370,000 market rental housing units and over half a million privately-owned housing units. In brief, major social and environmental benefits can be obtained by leveraging the combined benefits of reduced automobile use for routine journeys and compact, transit-oriented residential development.

With its commitment to infrastructure investment, it is critical that the Government of Canada work with other levels of government to ensure that transit is well planned, and that this facilities transit-oriented residential development that will result in complete communities that maximize ridership. Methodologies and metrics must be developed to assess the investments against these principles.