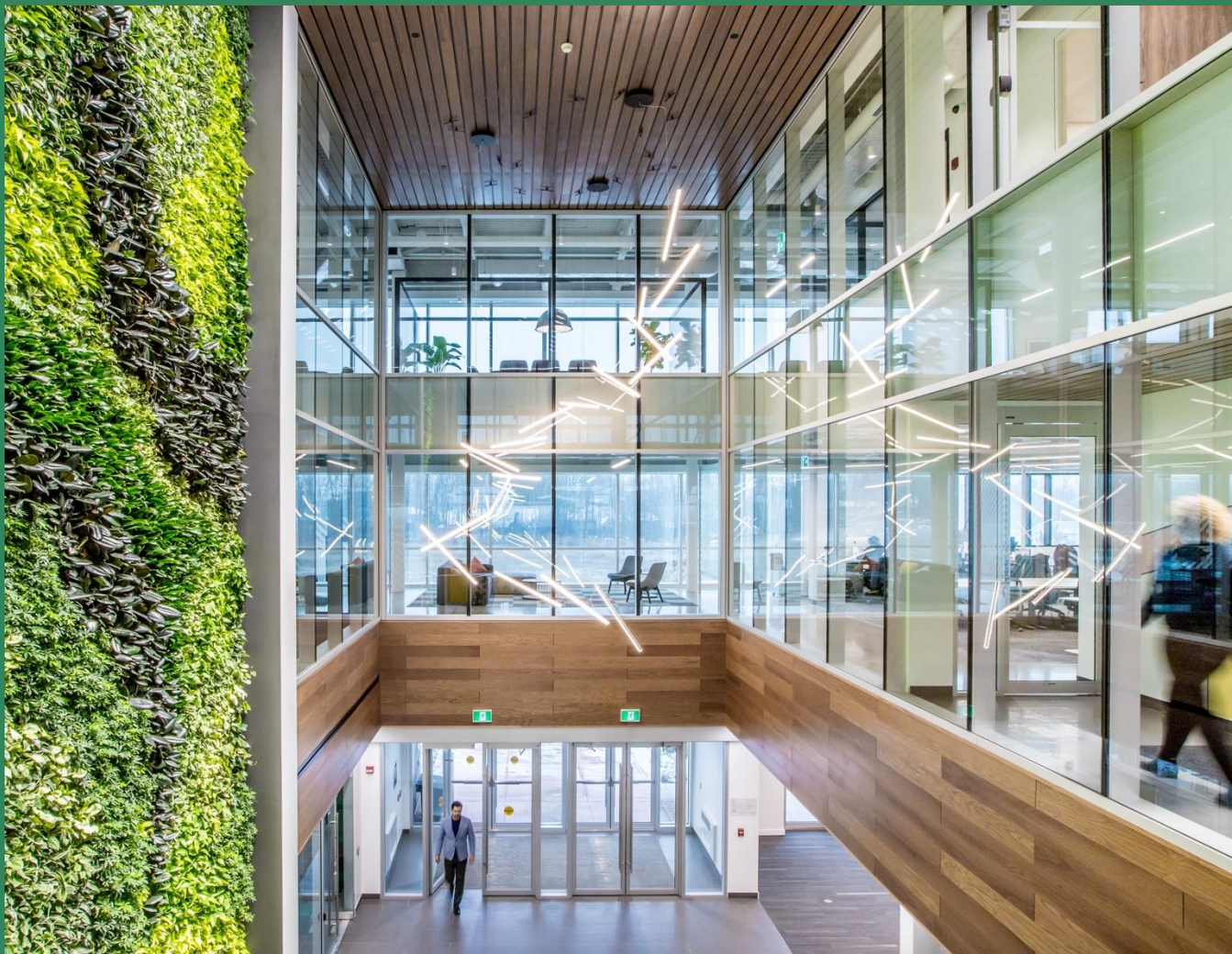


Submission to the pre-budget consultation, Standing Committee on Finance

August 2, 2024



Summary of recommendations

1 To provide sustainable and affordable homes, the government should:

Ensure all federal housing programs and the work of crown corporations **prioritize lower energy bills, increased building comfort, and improved resilience.**

2 To stimulate Canada's supply chain of low-carbon construction materials, the government should:

Create a grant program to support the needed **capacity for life cycle assessments and environmental product declarations** for products manufactured by small- and medium-sized Canadian companies.

3 To supercharge Canada's retrofit economy, the government should:

Ensure all federal deep carbon retrofit programs support and require the development of zero-carbon transition plans for large buildings.

Transition planning will ensure the effective timing and sequencing of carbon reduction measures that will contribute to meeting Canada's climate commitments.



Introduction

Whether new construction or retrofits, zero-carbon¹ and green buildings are Canada's best and most cost-effective opportunity to reduce greenhouse gas (GHG) emissions. Investing in zero-carbon buildings delivers valuable environmental, socio-economic and financial benefits.

For example, achieving Canada's 2030 emission reduction targets requires green building construction and retrofits to accelerate and scale up. As a result, Canada could experience economic growth driven by a potential **threefold increase to 1.5 million in direct green building jobs.**

Also, critical to Canada's economy, green buildings contribute to resilient communities that are better adapted to climate change—a crucial necessity given that extreme weather events in 2023 cost \$3.1 billion in insurable losses, according to the Insurance Bureau of Canada. Beyond adaptation to climate change, zero-carbon buildings also ensure safe, healthy, and accessible workspaces and affordable homes that recognize the total cost of ownership.

The reasons for pursuing a zero-carbon building transition are clear, but progress needs to accelerate. Canada's Emissions Reduction Plan (ERP) requests a 37 percent reduction in emissions for the building sector by 2030 compared to 2005. Reaching this target will be challenging given that:

- The building sector's overall emissions increased between 2005 and 2022 but are still below pre-pandemic levels;²
- Building operations account for 18%³ of Canada's GHG emissions, but when building materials and construction processes are considered, it rises to 28%; and,
- Limited access to low-carbon materials and labour shortages hampers widespread adoption.

However, just focusing on **retrofitting Canada's existing large buildings could help achieve 55 percent of the projections set for the building sector by the ERP.** It could eliminate 21 MT of GHG emissions out of the 38 MT reduction defined by Environment and Climate Change Canada.⁴

To reach this ambitious objective, CAGBC recommends the following policies to improve conditions for successfully scaling up green buildings in Canada.

¹ A zero-carbon building is a highly energy-efficient building that either produces on-site or procures non-emitting renewable energy or high-quality carbon offsets to counterbalance the annual carbon emissions from its materials and operations.

² ECCC, [Greenhouse gas sources and sinks: Executive Summary, 2024.](#)

³ Natural Resources Canada, [Canada Green Buildings Strategy](#), July 2024.

⁴ CAGBC, [Roadmap for Retrofits in Canada](#), 2017.

1 Provide affordable and sustainable homes

According to the Canada Mortgage and Housing Corporation, Canada needs 5.8 million new homes by 2030 to restore affordability.⁵ These new needed homes will likely add a further 140.7 MT/year⁶ in carbon emissions, equivalent to another 44 million cars on our streets if not built to high-efficiency standards.

Focusing on increasing the housing supply is critical to solving the affordability crisis, but we cannot risk prioritizing quantity over quality while still meeting our emissions reduction goals.

Canadians need quality-built homes that utilize current clean technology to reap significant benefits such as low energy bills, greater resiliency, improved air quality, and lower carbon emissions.

By not focusing on these outcomes and guiding how new housing is built, we risk creating millions of new homes that will add to carbon emissions and burden future homeowners with increased energy costs and potentially expensive retrofits. As such, the federal government must ensure that its crown corporations and housing programs have the utmost regard for prioritizing affordability along with cost-effective energy-efficiency, net-zero emissions and climate-resilient actions.

To ensure housing is built right and ready for future weather and the low-carbon economy, the federal government should advance on two fronts:

- Establish requirements for federal housing programs; and,
- Lead by example on all residential units built on federal lands.

CAGBC recommends improving housing programs with absolute targets on energy efficiency and carbon reduction tailored to climate zones and provincial grids, respectively. It would drive better building performance, reduce uncertainty and simplify the verification of results by benchmarking. As such, housing programs should include the following outcome measures of impact for carbon obtainment:

1. Energy Use Intensity (EUI), measured in kWh/m²/year, determines a building's energy efficiency, resulting in lower energy bills; and,
2. Greenhouse Gas Intensity (GHGI), measured in kgCO₂e/m², quantifies carbon emissions, and reducing them would support the federal government's climate objectives.

Housing financing and programs that do not account for and seek the highest energy efficiency requirements and carbon reduction levels would be a significant missed opportunity.

Development should be green for housing on federal lands or when converting existing federal buildings for residential use. The federal government could reward companies ready to fill the need for energy-efficient, climate-resilient, and low-energy-cost homes by selling or leasing land below market price and sharing a part of the upfront cost (climate risk assessment, e.g.). The federal government should apply current policies and tools, such as the Greening Government Strategy, to guide all housing developed on federal lands.

⁵ CHMC, [Estimating how much housing we'll need by 2030 | CMHC \(cmhc-schl.gc.ca\)](https://cmhc-schl.gc.ca), September 2023

⁶ Housing and Climate Task Force, [Climate Impacts of 5.8 million new homes](#), November 2023

What this means:

1. All new housing should have net-zero emissions unless a GHG life cycle cost analysis indicates net-zero-emissions-ready construction, particularly for lands owned by the Department of Defense or Canada Post.
2. All major federal building retrofits, including conversions to housing, should require a GHG reduction life-cycle cost analysis to determine the optimal GHG savings.
3. All new or retrofit buildings should require a climate change risk assessment.
4. Federal crown corporations and departments should include a covenant in any sale of lands or the signing of long-term leases for establishing housing with the requirement that it be highly energy-efficient, net-zero emissions and climate-resilient.

2 Stimulate Canada's supply chain of low-carbon construction materials

Every building and retrofit that does not target zero-carbon operations today will increase emissions. For these same buildings to reach net zero by 2050, significant investments in mechanical equipment, ventilation systems, and building envelopes will be required. Attaining meaningful carbon reductions for buildings will also require emphasis on embodied carbon reduction.⁷ Research anticipates that almost 75 percent of emissions from new construction in Canada will be due to embodied carbon from materials between now and 2030.

Public procurement policies must shift from the lowest-cost material options to low-carbon construction. Establishing a Canadian low-carbon supply chain will require investment in research, development, and manufacturing support. Further, the sector will need clarity on documentation requirements and a transparent timeline for new regulations.

The Treasury Board Secretariat started on this path in December 2022 by releasing a "[Standard on embodied carbon in construction](#)" for concrete mix. In May 2023, the City of Toronto announced new embodied carbon regulations, and the City of Vancouver followed in October 2023. All require Environmental Product Declarations (EPDs) or Life Cycle Assessments.

To level the playing field with Canada's largest trading partner, the US, which is investing \$330 million to make its manufacturing more competitive through EPD⁸, the federal government should invest at least \$25 million to enable Canadian SMEs to pursue LCAs and facilitate product-specific EPDs for low-carbon products, focusing on structural construction materials, as prioritized by the Greening Government Strategy and the future Buy Clean Strategy.

This investment could bring up to 500 EPDs or LCAs to the market and the Life Cycle Inventory, established through the LCA² Initiative, to support the creation of a Canadian low-carbon supply chain and enhance local economic growth and global competitiveness.

⁷ Embodied carbon emissions arise from manufacturing, transport, installation, use, and end-of-processing of materials used in building construction. Design teams can find the greatest embodied carbon savings by carefully considering the issue from project outset.

⁸ Investment of 250 million USD on Environmental Product Declaration Assistance, [EPA - Inflation Reduction Act Presentation- 2022](#)

3 Crowd-in private investment in zero-carbon green buildings

Over half (52 percent) of the building sector's GHG emissions come from commercial and institutional buildings.⁹ Although commercial real estate transactions for new office development have slowed, there is a strong "flight to quality" as investors and tenants demand green and low-carbon workplaces. These investors and tenants expect workplaces that provide healthy, high-quality environments that reduce energy use and GHG emissions.

According to CAGBC's [Decarbonizing Canada's Large Buildings study](#), released in December 2021, nearly all of Canada's existing large commercial and institutional buildings can achieve net zero emissions over time.¹⁰ These much-needed deep carbon retrofits will improve building performance and reduce GHG emissions. However, the federal government and the private sector must overcome the competing priorities and economic, market, and financial barriers that prevent the pursuit of deep carbon retrofits.¹¹

Over the next 30 years, most existing large buildings will have only one opportunity to finance a deep carbon retrofit cost-effectively. The best financial approach aligns building systems' typical renewal lifecycle with retrofit investment. To support these critical investments and retrofits, all building owners require transition plans to remove fossil fuels from their building portfolios over time.

The government should support long-term planning by requiring zero-carbon transition plans and energy efficiency upgrades (such as enhanced envelopes with higher-performance glazing or fuel switching options such as heat pumps) as a condition of all federal programs supporting retrofits for large buildings.

The federal government should consider including transition plans in programs such as the Affordable Housing Fund: Renovation or retrofit programs from the Green Municipal Fund.

⁹ Canada Green Buildings Strategy

¹⁰ Natural Resources Canada, The [Green Buildings Strategy](#), September, 2022.

¹¹ A deep carbon retrofit is a project involving multiple energy efficiency and/or renewable energy measures in an existing building, designed to achieve major reductions in net energy use (40% or greater reductions).

Conclusion

Climate change and resiliency must be Canada's top priorities following increasingly unpredictable and damaging weather events. We need to lower carbon emissions significantly to slow and eventually reverse climate change. Zero-carbon buildings, a proven and cost-effective approach, can reduce emissions at scale in the building sector.

Reaching net-zero emissions by 2050 requires the decarbonization of all of Canada's large buildings and the financing of bold actions by the Federal government. Committing Canada to decarbonize its built environment will align with Canada's global commitments to the Buildings Breakthrough (COP 28) and the Declaration de Chaillot. It will also provide a global model that other countries can follow and, at the same time, ensure buildings and communities can better respond to climate change. As a co-benefit, the retrofit economy will create new jobs, foster innovation, and grow Canada's low-carbon supply chain.

The green building sector is ready. We've proven that zero-carbon buildings are technically and financially feasible and that all large buildings have a path to zero. For the building sector to advance its carbon targets, it needs intentional and thoughtful federal leadership, especially around procurement and public investment. Further, the government can leverage a national retrofit strategy tied to GHG reductions to advance healthier and more affordable homes.

Committing to zero-carbon buildings and a net-zero emissions economy will profoundly change Canada. Our approach—the building sector and the federal government—must be bold and creative. Only by matching our ambitions with determined action will we meet Canada's 2050 decarbonization goal and address the current housing shortage with quality-built, energy-efficient, and affordable homes that do not tip the carbon scales.