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Standing Committee on Finance

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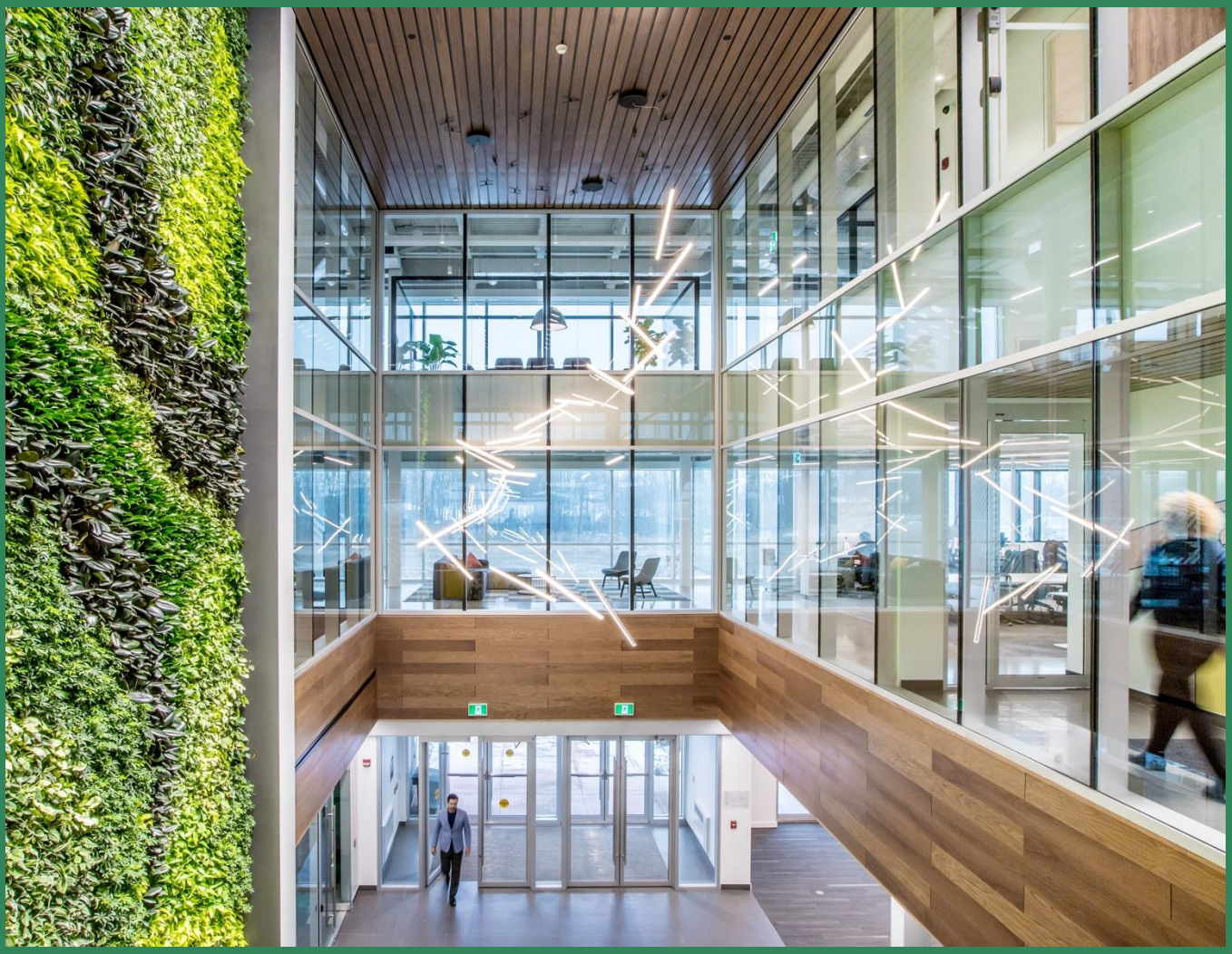

CAGBC Canada Green Building Council | Conseil du Bâtiment Durable du Canada

100 Murray Street, Suite 400
Ottawa, Ontario K1N 0A1

cagbc.org

Summary of recommendations

1 To supercharge Canada's retrofit economy, the government should

Require zero-carbon transition plans for all building types and support their development as part of any deep carbon retrofit program. Transition planning will ensure the effective timing and sequencing of carbon reduction measures.

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

Create a grant program to build additional capacity for life cycle assessments and environmental product declarations (EPD) for products manufactured by small- and medium-sized Canadian companies.

3 To crowd in private investment for zero-carbon green buildings, the government should

Support the upfront cost of zero carbon buildings projects through a new incentive program.

Introduction

Whether new construction or retrofits, zero-carbon buildings[1] are green buildings and Canada's best and most cost-effective opportunity to reduce greenhouse gas (GHG) emissions. Investing in zero-carbon buildings delivers valuable environmental and socio-economic 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 an economic boom driven by a potentially **threefold increase to 1.5 million in direct green building jobs.**

Also critical to Canada's economy, green buildings result in resilient communities that can better adapt to climate change – a crucial necessity given the recent devastation from extreme weather events, which according to the Insurance Bureau of Canada, **cost $3.1 billion in insurable losses**. Beyond adaptation to climate change, green 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 emission reduction for the building sector by 2030 compared to the 2005 levels. Reaching this target will be challenging given that:

- The building sector's overall emissions increased between 2005 and 2019 but is seeing a reduction in 2020 and 2021;[2]
- Building operations account for 18% of Canada's GHG emissions, but when building materials and construction processes are considered, it rises to 28%; and,
- Limited access to low-carbon carbon materials and labour shortages hampers widespread adoption.

However, just focusing on **retrofitting Canada's large buildings could help to achieve 55 percent of the projections set for the building sector by the ERP**. That could see a reduction of 21 MT of GHG emissions out of the 38 MT reduction defined by Environment and Climate Change Canada.[3]

To reach this ambitious objective, the federal government allocated funding in Budget 2022 for a Green Buildings Strategy and in Budget 2023 for clean energy. Moreover, public leadership is also established through the Greening Government Strategy, setting milestones for new, existing and leased federal buildings. CAGBC continues to support these initiatives and recommends the following policies to improve conditions for successfully implementing the different strategies and decarbonizing Canada's large buildings.

[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 2023*, Greenhouse gas sources and sinks in Canada: executive summary 2023 - Canada.ca
[3] CAGBC, Roadmap for Retrofits in Canada, 2017

1 Supercharge the retrofit economy

Almost all the 150,000 existing large commercial and institutional buildings in Canada[4] can reach net zero over time, according to CAGBC's *Decarbonizing Canada's Large Buildings* study, released in December 2021. These much-needed deep retrofits will improve building performance and reduce GHG emissions. However, the federal government must work with the private sector to overcome the competing priorities and economic, market, and financial barriers that prevent the pursuit of deep carbon retrofits.[5]

Over the next 30 years, owners could have only one opportunity to finance a complete deep carbon retrofit cost-effectively. Aligning the typical life cycle of building systems renewal with investment in retrofit is the best approach. Building owners require transition plans to strategically invest in the retrofits needed to remove fossil fuels from their building portfolios over time. The government could support this 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 federal funding.

We recommend an investment of $3 million over three years to Natural Resources Canada (NRCan) to support the development of guidelines, training, and communications to ensure the building sector quickly adopts transition plans.

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. It will require significant investments in mechanical equipment, ventilation systems, and building envelopes for these same buildings to reach net zero by 2050. Attaining meaningful carbon reductions for buildings will also requires a focus on embodied carbon.[6] For new construction, research predicts that almost 75 percent of emissions between now and 2030 will come from materials.

Public procurement policies must shift from the lowest-cost option to low-carbon construction materials. 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 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 will have its own regulation, targeting Fall 2023. All are requiring Environmental Product Declarations (EPDs) or Life Cycle Assessments.

[4] Natural Resources Canada, The Green Buildings Strategy, September, 2022.
[5] 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).
[6] 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.

To level the playing field, the federal government should invest $25 million to enable Canadian SMEs to pursue LCAs and facilitate product-specific EPDs for low-carbon products, with a focus on structural construction materials, as prioritized by the Greening Government Strategy and the future Buy Clean Strategy. To compare this ask with the Inflation Reduction Act, the United States federal government will invest more than $ 330 million in the same type of initiative.[7]

This investment could bring up to 500 EPDs or LCAs to the market and the Life Cycle Inventory, established through the LCA[2] Initiative to support the creation of a Canadian low-carbon supply chain and enhance local economic growth and global competitiveness.

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

Pressure is increasing to ensure that the building sector remains globally competitive as other jurisdictions invest aggressively in products and technologies to decarbonize buildings. Commercial real estate companies face pressure from domestic and global investors to set net-zero carbon targets and meet stated environmental, social and governance (ESG) objectives. At the same time, corporate tenants expect sustainability actions from their landlords to meet their own ESG goals.[8] With this increased pressure from the market, real estate companies are turning to data collection and transition planning, new approaches to financing decarbonization o and third-party certifications like CAGBC's Zero Carbon Building standards to verify outcomes .

From a national perspective, pressure is coming from trading partners. In the United States, the combination of the Inflation Reduction Act, the executive order on a federal Buy Clean and previous funding allocated to infrastructure has created a massive flow of capital and opportunities for the building sector. To assert Canada's competitiveness and scale up deep carbon retrofits and new zero carbon construction, the federal government could create an incentive program that supports the upfront cost of deep carbon retrofits that aim for decarbonization, similar to an early 2000s Natural Resources Canada program called the Commercial Building Incentive Program. This approach could include a performance scale: the more carbon emissions reduced, the greater the incentives gained.

A first funding stream should be dedicated to commercial and institutional buildings. This incentive could be more favourable if projects can achieve a high standard, such as the Zero Carbon Building – Performance Standard or demonstrate a measurable reduction in carbon emissions.

A second stream may support upfront costs for residential buildings, especially for purpose built low- and mid-rise multi-unit residential buildings. This building type has a more challenging business case,[9] but the sheer number of rental and market housing being built requires attention and investment. All these projects would require transition plans to obtain financing.

[7] Investment of 250 million USD on Environmental Product Declaration Assistance, EPA - Inflation Reduction Act Presentation- 2022
[8] JLL, Capital Markets Foundations and the Net-Zero Carbon Transition (jll.ca), October 2022.
[9] CAGBC, Decarbonizing Canada's large buildings, p22 and 23, December 2021.

Conclusion

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

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 provide a global model that other countries can follow and, at the same time, ensure buildings and communities can be better prepared to respond to the impacts from 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.