

## Advancing Tiered Building Codes for a Sustainable Nova Scotia

By signing on to the Pan-Canadian Framework on Clean Growth and Climate Change, Nova Scotia agreed to a net-zero energy-ready (NZER) code for new construction by 2030.<sup>1</sup> This includes the National Building Code Part 9.36 (residential buildings under 600m<sup>2</sup>) and the National Energy Code. To meet our commitments, the province must adopt all five tiers of the National Building Codes and specifically adopt Tier 5, net-zero energy-ready construction, by 2030. The tiers are ambitious but achievable and provide scope for the industry to learn and adapt. In addition, it would also pave the way for Nova Scotia to achieve its climate goals more rapidly, enhance climate resilience and ensure an energy-secure future for the province.

### Cost of Building Net-Zero Versus Retrofitting

Opting to build with high-efficiency standards now, rather than pursuing retrofits in the future, makes more financial and environmental sense. This approach also addresses upfront emissions, which are released into the atmosphere during material extraction and manufacturing for construction.<sup>2</sup> The Canada Green Building Council estimates an average upfront cost premium of 8% to construct net-zero energy-ready buildings in Canada. However, it also results in annual savings of about 24% due to lower energy bills and operating costs.<sup>3</sup> Other estimates place this at a 9% premium with savings of up to 35%.<sup>4</sup> Meeting our climate commitments requires a net-zero carbon building stock. Hence, it makes no sense to build inefficient buildings now only to have to retrofit them later.<sup>5</sup>

### Training and Capacity Building

Nova Scotia has about 3.4 Certified Energy Advisors (CEAs) per 10,000 households, one of the highest rates in Canada. Certified Energy Advisors (CEAs) possess expertise in performing evaluations of home energy efficiency, implementing residential energy efficiency initiatives, and educating

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<sup>1</sup> Government of Canada. (2016). Pan-Canadian Framework on Clean Growth and Climate Change: Canada's Plan to Address Climate Change and Grow the Economy.

[https://publications.gc.ca/collections/collection\\_2017/eccc/En4-294-2016-eng.pdf](https://publications.gc.ca/collections/collection_2017/eccc/En4-294-2016-eng.pdf). Page 17.

<sup>2</sup> World Green Building Council. (2019). Bringing embodied carbon upfront.

[WorldGBC Bringing Embodied Carbon Upfront.pdf](#).

<sup>3</sup> Canada Green Building Council. (2019). Making the Case for Building to Zero Carbon. [Making the Case for Building to Zero Carbon \(cagbc.org\)](#), page 35.

<sup>4</sup> EnviroCentre. (2020). Retrofitting to Net Zero. [Retrofitting-to-Net-Zero-Getting-it-Right Presentation.pdf \(envirocentre.ca\)](#), Page 15.

<sup>5</sup> Brookfield Sustainability Institute and RBC Climate Action Institute. (2023). [High Rise, Low Carbon: Canada's \\$40 billion Net Zero building challenge - RBC Thought Leadership](#).

homeowners.<sup>6</sup> Therefore, energy advisors can play a pivotal role in supporting the implementation of tiered building codes. Collaboration with Efficiency One, which provides recruitment support, industry training and upskilling, and funding support to ramp up capacity for home energy assessments, would further bolster code enforcement through energy modelling, compliance verification, and incentive programs to encourage adoption of higher efficiency standards in the province.<sup>7</sup> Energy advisors should be included and engaged throughout the process of adopting higher-efficiency codes.

Advancing efficient energy codes will contribute to social equity through better and more innovative buildings. Examples include using better materials and pre-manufactured components<sup>8</sup>, smart design of simpler and more efficient building shapes<sup>9</sup>, and increased density in urban areas.<sup>10</sup>

### Municipal Activity

Some Nova Scotia municipalities have already shown an eagerness to require more energy-efficient building construction and have taken steps to encourage it. For example, the Town of Bridgewater has recommended introducing voluntary Energy Step Codes exceeding minimum provincial standards.<sup>11</sup> The Halifax Regional Municipality recently passed a motion to adopt tiered energy codes in new construction, demonstrating leadership in enforcing higher efficiency standards.<sup>12</sup> Empowering municipalities and Indigenous communities to adopt advanced National Building Code tiers fosters local engagement and addresses unique regional sustainability needs. strategic collaboration among

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<sup>6</sup> Efficiency Canada. (2022). The 2022 Canadian Energy Scorecard: Provinces and Territories [2022-Canadian-Energy-Efficiency-Scorecard-English.pdf \(efficiencycanada.org\)](#), Page 166-167.

<sup>7</sup> Efficiency One Annual Report 2022, [23753-E1-Annual-Report-8.5x11-FINAL-April-28.pdf \(ens-efficiency-ns-prod-offload-647701102377-ca-central-1.s3.ca-central-1.amazonaws.com\)](#).

<sup>8</sup> Realtor Magazine. (2023). “What’s New in Multifamily: Building Processes” by Barbara Ballinger: <https://www.nar.realtor/magazine/real-estate-news/home-and-design/whats-new-in-multifamily-building-processes>.

<sup>9</sup> Building Science Corporation. (2012). The Function of Form—Building Shape and Energy. <https://buildingscience.com/documents/insights/bsi-061-function-form-building-shape-and-energy>

<sup>10</sup> Proceedings of the National Academy of Sciences. (2017.) “Global scenarios of urban density and its impacts on building energy use through 2050.” <https://www.pnas.org/doi/10.1073/pnas.1606035114>

<sup>11</sup> Bridgewater. (2016). Community Energy Investment Plan: The Way Forward. <https://www.bridgewater.ca/document-library/sustainability/sustainable-bridgewater/1667-community-energy-investment-plan-the-way-forward/file>. Page 44.

<sup>12</sup> Halifax Regional Municipality. (Nov 4, 2021). Environment and Sustainability Standing Committee, Agenda Item 12.1. [Administrative Order 2021-002-OP – Respecting Net-Zero Construction of New Municipal Facilities Within the Halifax Regional Municipality - November 4/21 Environment and Sustainability Standing Committee | Halifax.ca](#).

Nova Scotia municipalities can secure funding for larger initiatives that may be challenging to undertake independently.<sup>13 14</sup>

### Significance of Net-Zero Ready Buildings

Net-zero energy-ready buildings offer a multitude of benefits to communities and play a crucial role in achieving sustainability and environmental objectives in Nova Scotia. They serve as landmarks of innovation, smart design, and a modern approach to construction. The implementation of tiered building codes seeds the development of energy-efficient construction practices across all building types and increases productivity of builders to be greener faster. Net-zero energy-ready buildings should serve to create a smarter, more productive building process.

The widespread adoption of net-zero energy-ready buildings will not only contribute to energy conservation but also inspire other communities to prioritize sustainability, fostering a more sustainable and environmentally conscious province overall. An example of such a community is the first net-zero subdivision in Nova Scotia, expected to reduce greenhouse gas emissions by 160 tonnes per year.<sup>15</sup> Adopting such high-efficiency buildings is needed for Nova Scotia to meet its legislated greenhouse gas reduction targets of 53% below 2005 levels by 2030.

### Conclusion

Legislating tiered National Building Codes in Nova Scotia, with incremental steps toward net-zero energy ready new construction by 2030, is essential to meeting the province's greenhouse gas emissions-reduction goals. Strategic collaboration, capacity building, and local empowerment can enable a smooth transition that drives economic growth through energy efficient, resilient, and innovative buildings across the province.

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<sup>13</sup> Zero30. (Jan 9, 2020). The Power of Municipal Cooperation, [The Power of Municipal Collaboration — Zero30](#).

<sup>14</sup> Press Release: "Canada and FCM Announce Green Investments for Communities in Nova Scotia." (Mar 10, 2022). [Canada and FCM Announce Green Investments for Communities in Nova Scotia - Canada.ca](#).

<sup>15</sup> Press Release: "Government of Canada announces support for the first net-zero energy community in Nova Scotia." (June 12, 2021). <https://www.canada.ca/en/atlantic-canada-opportunities/news/2021/07/government-of-canada-announces-support-for-the-first-net-zero-energy-community-in-nova-scotia.html>