

Net Zero Energy Codes in Canada

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ABSTRACT

Canada's National Model Codes, developed by the Canadian Board for Harmonized Construction Codes with support from the National Research Council, are adopted and enforced by local authorities across Provinces, Territories, and other jurisdictions. Since 2015, these Codes have expanded their energy provisions to include a set of performance Tiers, offering a clear path toward 'net-zero energy.' This approach reduces uncertainty and allows jurisdictions to enforce the Tier that best aligns with their specific goals and circumstances.

The 2025 Codes will introduce requirements for greenhouse gas (GHG) emissions from building operations via a set of GHG Levels, analogous to the existing energy Tiers. Given Canada's diverse energy landscape, the Energy Tiers and GHG Levels are designed independently, providing jurisdictions with the flexibility to choose their pathway toward 'net-zero' goals.

This dual focus on energy and carbon performance metrics requires robust simulation support to ensure proposed changes are both effective and economical for industry. Assessments involve simulations of 240 residential and 16 commercial/multi-family building archetypes across up to 33 Canadian locations. These simulations evaluate the impact of proposed code changes and assist in developing prescriptive requirements suitable for most buildings.

The presentation will present the assessment process with examples of infiltration and ventilation, highlighting challenges posed by code limitations, modelling assumptions and their impact on assessments.

KEYWORDS

Building Codes, Energy, Operational GHG Emissions