

Advancing Net Zero Snapshot: Canada



Context

Canada Green Building Council's Zero Carbon Building Initiative was created to help achieve Canada's goal of 30% greenhouse gas emissions reductions by 2030, by championing low-carbon commercial, institutional and high-rise residential buildings. Since Canada's energy grid and climate vary considerably, the Zero Carbon Building (ZCB) standard reinforces the importance of energy efficiency while also driving careful choices about the types of energy used and encouraging more renewable energy generation both on the building site and offsite.



1. Measure and Disclose Carbon

Projects must verify an annual zero carbon emissions balance

ZCB-Performance certification for existing buildings is awarded based on a twelve month period of operations



2. Reduce Energy Demand

There is no minimum energy efficiency standard however new buildings aiming for ZCB-Design certification must achieve TEDI* targets based on climate zone

Report Energy Use Intensity (EUI**)

Report Peak Demand



3. Generate Balance from Renewables

Onsite: At least 5% for ZCB-Design certification only

Offsite: Allowed, with specific eligibility requirements

Procured via Renewable Energy Certificates (RECs) or bundled green power products (green power purchased together with associated RECs)



4. Improve Verification and Rigour

Embodied carbon: All projects must report the embodied emissions of the building's structural and envelope materials using life-cycle assessment (LCA) software

Methodology and Verification

- Location based methodology within the [Greenhouse Gas Protocol Corporate Standard](#), with average regional emissions intensities for natural gas and grid electricity
- Annually generate or procure enough zero-emissions renewable energy to offset 100% of the emissions associated with the building's total annual site energy consumption

Additional Information

- * TEDI = the amount of heating energy delivered to the project that is outputted from any and all types of heating equipment, divided by gross floor area (kwh/m²/year)
- ** EUI = the sum of all energy consumed on site (e.g., electricity, natural gas, district heat), including all process energy, divided by the building gross floor area (kWh/m²/year)
- Zero Carbon Transition Plan: Projects relying on onsite combustion of fuels other than zero emissions biofuels must demonstrate how the building will decarbonise in the future, to be updated every 5 years

Pathway: Certification

Launch date: May 2017

New standard, can be achieved in conjunction with LEED or in isolation.

Developed as a result of extensive industry consultation, the standard also has a pilot program of 16 buildings spanning across Canada, from a mixture of typologies, new-build and existing, to evaluate the application of the standard in practice.

New Thermal Energy Demand Intensity (TEDI*) metric introduced, with targets for ZCB-Design certification shown below by climate zone, which results in greater resilience and occupant comfort, and ensures that building designers focus on minimizing a building's demand for energy prior to producing or procuring renewable energy.



Pilot Projects

16

Registered*

*as of March 2018

TEDI targets for ZCB-Design certification

Climate Zone	TEDI target (kWh/m ² /year)
4	30
5	32
6	34
7	36
8	40

GBC Definition

A zero carbon building is highly energy efficient and produces onsite, or procures, carbon-free renewable energy in an amount sufficient to offset the annual carbon emissions associated with operations

Find out more

- [CaGBC Zero Carbon Building Program](#)
- [WorldGBC's Advancing Net Zero global project](#)

Advancing Net Zero

WorldGBC's global project to accelerate uptake of net zero carbon buildings to 100% by 2050. These snapshots outline specific GBC action, and how it relates to the project framework, including the four key principles shown left.