Buildings are the second biggest source of municipal emissions. The Zero Carbon Step Code is a new addition to the BC Building Code that enables local governments to reduce carbon emissions from new buildings.

The Zero Carbon Step Code supports the construction of energy-efficient and resilient residential buildings. Many builders are already installing low carbon appliances because they reduce monthly costs for homeowners and offer summer and winter comfort.

Under the Zero Carbon Step Code (ZCSC) local governments can require or incentivize builders to meet one of four emissions levels (EL).

1. **Measure-only (EL-1)**: measurement only of a building's emissions (NB: most building design software already provides this data). Purpose is to build knowledge and capacity;
2. **Moderate (EL-2**): in most cases, will require electric space heating or hot water systems;
3. **Strong (EL-3**): in most cases, will require electric space heating and hot water systems;
4. **Zero (EL-4)**: in most cases, will require full electrification of a building.

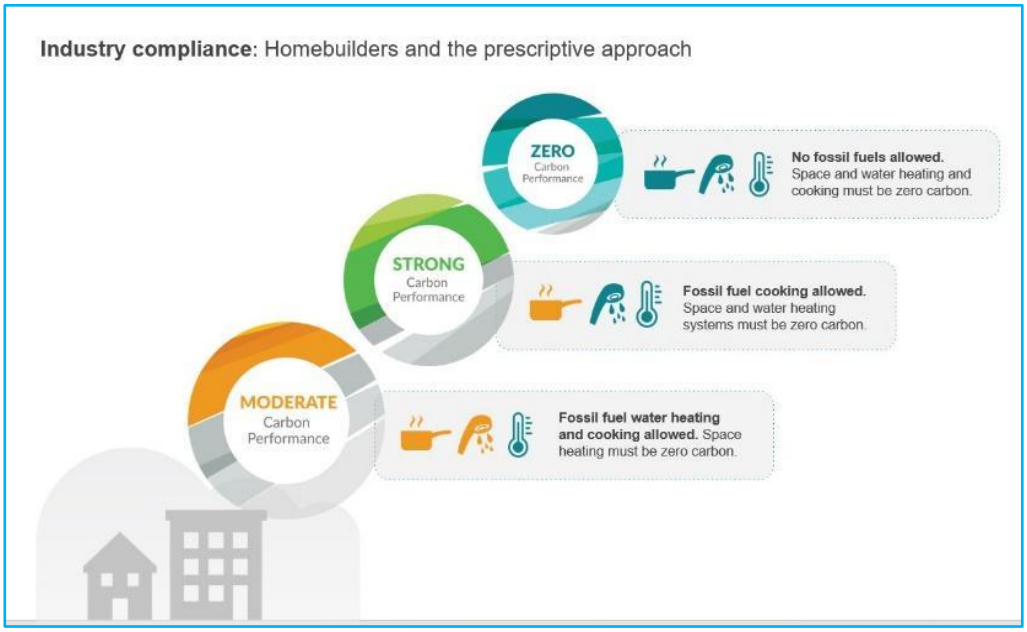
Note: Gas fireplaces, barbeques and patio heaters are allowed under all levels.

Over 25 municipalities and Regional Districts have already adopted the Zero Carbon Step Code, most starting at EL-3 or 4. By 2030, Zero Carbon EL-4 will be mandatory across BC.

Information for Builders

Builders can achieve the required Zero Carbon Step Code energy level two ways:

- By measuring the quantity or intensity of emissions (**performance approach**)
  OR
- By installing zero-emission appliances such as heat pumps, electric stoves, and hot water heaters (**prescriptive approach**)



How does the Zero Carbon Step Code relate to the BC Energy Step Code?

The current BC Energy Step Code regulates the energy efficiency of new buildings, whereas the Zero Carbon Step Code assesses a building's carbon emissions. The Energy Step Code requires changes in **building materials and techniques** whereas the Zero Carbon Code simply means **installing electric appliances** rather than gas appliances.

In most cases, electric heat pumps will be the appliances of choice. They cost approximately the same to install as gas appliances but are 2-5 times more efficient and also provide cooling during the summer.

Benefits of the Zero Carbon Step Code

- The ZCSC promotes healthier and more comfortable living spaces adapted to both cold winters and warmer summers.
- Electric heat pumps are more affordable in the long term. Heat Pumps Pay Off: Unlocking lower cost heating and cooling in Canada.
- Building emission and energy standards are becoming increasingly stringent. Installing low emission, energy efficient appliances in new buildings avoids costly retrofits in the future.
- Carbon price increases will continue to raise the cost of natural gas for residential and commercial customers, as will the addition of Renewable Natural Gas (RNG) to the gas stream.
- Gas fireplaces, barbecues and patio heaters are allowed under all levels of the ZCSC.
- Natural gas (fossil gas) is composed of methane, a potent greenhouse gas. Natural gas is obtained by fracking, an industrial process associated with contaminated ground water, air pollution, and health impacts.

A study by ZEBx concluded that high-performance, all electric buildings can be constructed for less than the average cost of similar code-minimum buildings. These costs can be expected to fall further as high-performance construction becomes the norm.

This Zero Carbon Step Code Primer was prepared by First Things First Okanagan, June 2024. Contact info@firstthingsfirstokanagan.com www.firstthingsfirstokanagan.com.