



BC ENERGY STEP CODE FACT SHEET 2020

What is the BC Energy Step Code (BCESC)?

In April 2017, the Province of BC adopted the “BC Energy Step Code”, a provincial standard designed to help both local government and industry steadily move toward a future where all new buildings across BC are “net-zero energy-ready” by 2032.

Until now, the BC Building Code gave designers and builders the option to take either a prescriptive approach or a performance approach to meet energy efficiency code standards.

Most buildings in BC have demonstrated compliance through a prescriptive approach – where buildings must meet specific requirements for insulation, windows, furnaces, water heaters, lighting and other equipment systems. This approach focuses on individual elements, rather than ensuring the building functions well as a system.

The BC Energy Step Code is a performance-based standard. It establishes a desired outcome in terms of energy efficiency requirements and leaves it to the design and building team to decide how to achieve the outcome.

Benefits

The BCESC provides consistency to industry by establishing a set of performance standards, rather than the patchwork of requirements which currently exist.

It also helps local governments encourage or enforce a higher energy-efficiency standard in new construction, so they are better able to meet their energy conservation and greenhouse gas reduction goals.

Additionally, the BCESC supports co-benefits such as improved occupant comfort, lower utility bills and reduced noise inside buildings.

Net-zero energy-ready buildings

Net-zero energy buildings produce as much energy as they consume. They are up to 80% more energy efficient than a typical new building and use on-site (or near-site) renewable energy systems to produce the remaining energy needed.

A net-zero energy-ready building is one that has been designed and built to a level of performance, such that it could, with the addition of solar panels or other renewable energy technologies, achieve net-zero energy performance.



Building costs

BC Housing published one of the “most sophisticated high-performance building cost assessments ever developed in Canada.”⁽¹⁾ It concluded that in most situations, and for most building types, builders can reach the requirements of the Lower Steps using construction techniques and products that are readily understood and available in today’s market, and for a cost premium of about 2 percent.

Steps

The BC Energy Step Code consists of a series of five steps, representing increasing levels of energy-efficiency performance.

Step 1 entails modeling energy performance and measuring air tightness to ensure that a building will meet or exceed the minimum energy-efficiency requirements in the base *BC Building Code*.

The purpose of Step 1 is to familiarize builders with a new way of measuring energy efficiency – the actual construction of the building remains the same as conventional construction.

At the other end of the scale, Step 5 represents a net-zero energy-ready standard – a standard that is being met by the most energy-efficient projects being developed today.

Implementation

Provincial requirements

In 2022, the Province of BC will require Part 9 buildings to meet Step 3 standards and Part 3 buildings to meet Step 2 standards.

In 2027, the province will expect Part 9 buildings to meet Step 4 standards and Part 3 buildings required to meet Step 3 standards.

And in 2032, the province will require builders to meet the energy-efficiency standards of the highest step (i.e. Step 5 for Part 9 buildings and Step 4 for Part 3 buildings.)

Local requirements

The local governments of the Sunshine Coast are implementing Step 1 of the BCESC in January 2021 for Part 9 (houses and small) buildings and Part 3 (large and complex) buildings.

By gradually adopting one or more steps of the BCESC ahead of the province’s mandatory schedule, local governments can help the building community transition to new energy-efficiency standards before they come into force. Adopting the standards ahead of schedule enables demand for more energy-efficient buildings to grow, the market to mature, industry capacity to increase, and costs to fall, as products and services for the design and construction of high-performance buildings become more widely available.



Implementation cont'd.

Current projects

Applicants who had previously initiated an application (before the local fall 2020 implementation date) for a new building would be permitted to build to the energy standards in place at the time of application, as long as they have submitted an application for a full building permit within one year.

Compliance

To meet the requirements of a particular step of the BCESC, a whole-building energy model of the proposed building design must be completed prior to construction.

Energy models are usually prepared by trained energy modellers, who work in collaboration with builders and/or designers to demonstrate how the energy efficiency requirements will be met.

The energy model is submitted to the local government as part of a building application.

Once constructed, and before occupancy, the building must undergo on-site airtightness testing to ensure the building is constructed as designed and meets airtightness expectations.

For Part 9 buildings, a Registered Energy Advisor can provide both energy modelling and airtightness testing. Registered Energy Advisors are third-party consultants who have been trained and licensed through their organization and Natural Resources Canada.

For Part 3 buildings, an architect, engineer, or trained energy modeler can provide energy modelling needed to achieve the steps.

Following airtightness testing, a Letter of Assurance confirming that the building performs in accordance with its design is provided to the local government.

Registered Energy Advisors

Local builders who are already constructing homes to the higher levels of the BCESC typically hire Registered Energy Advisors from the Lower Mainland to test their buildings.