

# Participant guide

## Commercial New Construction Performance Program

November 2022



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# Partners in energy efficiency

We're committed to transform BC's energy future by helping customers lower their greenhouse gas emissions and supporting the Province's Roadmap to 2030. One way to achieve this goal is to encourage builders and commercial customers to construct high-performance, energy-efficient buildings.

We understand that standard energy-efficiency measures are not always sufficient for the complex and specialized requirements of commercial buildings. The Commercial New Construction Performance Program addresses this by encouraging you to develop innovative energy-efficient solutions tailored to the design of your new building or facility.

This guide provides an overview of the program, including details about the incentives, as well as the type of projects most suited for the program.

Step-by-step instructions on how the program works are also provided, along with answers to frequently asked questions. For full program details, we encourage all builders and commercial customers to review the eligibility requirements and terms and conditions available at [fortisbc.com/newconstructionfunding](https://fortisbc.com/newconstructionfunding).

## FortisBC service areas



# When saving energy and emissions requires a customized approach

The Commercial New Construction Performance Program encourages the construction of high-performance, energy-efficient buildings in British Columbia to help you reduce energy use and greenhouse gas emissions, save money, increase occupant comfort and help B.C. meet its climate action goals.

The program provides financial incentives for exceeding minimum energy performance levels required by the British Columbia Building Code (BCBC). Consistent with the [BC Energy Step Code](#), the program establishes a target level of energy performance, as measured by the building's total energy use intensity (TEUI), and leaves it to you and the design and building team to decide on how to achieve it, using energy conservation measures (ECMs) customized to the design of your new building.

Participants must use whole building energy modelling to demonstrate that their design meets the targeted level of energy performance, and may use any materials, equipment or construction methods to do so. If your project is located in an area, or is of a type, that hasn't yet adopted Step Code requirements, your building may still be eligible for incentives by targeting a percentage improvement over the BCBC. To find out if your local municipality has adopted the Step Code, visit [energystepcode.ca/implementation\\_updates](http://energystepcode.ca/implementation_updates).

- Take a direct role in reducing energy use and greenhouse gas emissions.
- Improve the performance of your new building.
- Save money on operating costs.

To participate in the program, you must hire a consultant to perform a detailed energy model study to identify measures that will reduce natural gas and/or electricity consumption within your new building. ECMs may include:

- eliminating unnecessary energy use by shutting off idling or unneeded equipment through control systems
- implementing passive design strategies
- reducing the rate of energy consumption in low occupancy periods
- using more efficient lighting, equipment and mechanical systems
- airtightness and high-efficiency heat recovery ventilation and energy recovery
- improving building envelope performance

Although this is not a complete list of the potential ECMs that can be included, it's easy to see how these types of measures can deliver energy and cost savings throughout a building's lifecycle.

This program may be modified or cancelled by FortisBC at any time. Visit [fortisbc.com/newconstructionfunding](http://fortisbc.com/newconstructionfunding) for up-to-date information and full terms and conditions.

# Is this program right for you?

We offer programs to encourage high-performance commercial new construction:

- The Commercial New Construction Performance Program provides performance incentives for larger, more complex Part 3 buildings looking to achieve a higher whole-building performance over the BCBC.
- Commercial product rebates for high-efficiency natural gas and electrical equipment are available for buildings not pursuing a whole-building approach to energy efficiency.

**Projects where electricity will NOT be supplied by FortisBC or municipal utilities of Summerland, Penticton, Grand Forks or Nelson Hydro should use natural gas as the primary energy source (i.e. more than other sources such as electricity) for two or more of these end uses:**

- space heating
- ventilation
- domestic hot water

If the project is a multi-unit residential or mixed-use residential/commercial building and natural gas will only be used for domestic hot water and ventilation in corridors, amenity rooms and/or retail/office spaces, but NOT in-suite ventilation, the following conditions must be met for using natural gas efficiently:

**Ventilation:** The mechanical engineer must provide a description of the ventilation design in natural gas-served areas and explain how heating energy will be reduced, including rationale for CFM (cubic feet/minute) per door for corridor ventilation\* and control strategies such as lower temperature set points.

- Gas-fired equipment must use condensing technology.

**Domestic hot water:** Water-efficient showerheads and faucet aerators must be incorporated to reduce hot water use relative to BCBC maximum flow rates.

- Boilers must also use condensing technology.

## To help determine if our Commercial New Construction Performance Program is right for you, consider the following:

- Is your project one of the following types of [Part 3 buildings](#) with an indoor floor area that is greater than 50,000 sq. ft.
  - commercial
  - institutional
  - multi-unit residential
  - light industrial (excludes buildings where manufacturing or industrial process occur)
- Will the building receive natural gas from FortisBC and/or receive electricity from FortisBC, the District of Summerland, City of Grand Forks, City of Penticton or Nelson Hydro?
- Are you still in the pre-design or design process (i.e. have not begun construction)?
- Are you planning to design a building that performs better than required by the BCBC?
- Are you planning on, or considering completing, a building energy model study to evaluate how your proposed building will perform?

If you checked off each question, this program may be right for you. Review terms and conditions at [fortisbc.com/newconstructionfunding](https://fortisbc.com/newconstructionfunding).

If **NOT**, you may want to consider the various product rebates we offer for high-efficiency space heating, water heating, commercial kitchen equipment and more.

For more information, contact your [key account manager, energy solutions manager or technical advisor](#).

\*The corridor adjustment factor must be less than 10 kWh/m<sup>2</sup>; if it is greater, CFM per door should be reduced. This threshold is based on the formula in section 2.5.2 of the City of Vancouver Modelling Guidelines, version 2.0.

# Rebates to encourage high-performance buildings

## Improve energy efficiency. Optimize overall performance. Achieve cost savings.

This program provides capital financial incentives to cover a portion of the incremental cost to build a higher performing building, compared to a building that simply meets the minimum code requirement of the BCBC. The capital incentives are based on the target energy performance of the building and the square footage of the indoor floor area. The higher performing the building, the higher the rebate. Additional rebates are available for having an energy model completed and for mid- and post-construction airtightness testing.

### Path 1: Capital incentives for energy modelling based on the BC Energy Step Code

Mixed-use buildings must be energy modelled to produce a single TEUI and thermal energy demand intensity (TEDI) for the building.

BC Energy Step Code performance target	Incentive factor	Maximum rebate
Step 2	\$1.00/sq. ft. x indoor floor area (sq. ft.)	\$500,000
Step 3	\$1.60/sq. ft. x sq. ft.	
Step 4 and higher	\$2.20/sq. ft. x sq. ft.	

**Total Energy Use Intensity (TEUI)** is a measure of the total amount of energy a building uses over the course of a year, per unit of building area. The metric considers all energy used in a building, including plug loads (e.g. lighting, appliances) and mechanical loads (e.g. elevators, mechanical systems, fans). TEUI is measured and expressed in kWh/m<sup>2</sup>/year.

### Path 2: Capital incentives for commercial buildings not subject to the BC Energy Step Code

Performance target % better than BC Building Code	Incentive factor	Maximum rebate
10-20%	\$1.00/sq. ft. x indoor floor area (sq. ft.)	\$500,000
20-30%	\$1.60/sq. ft. x sq. ft.	
more than 30%	\$2.20/sq. ft. x sq. ft.	

## Additional rebates

### Energy model rebate

The energy model rebate can help you with the cost of a detailed engineering analysis of your facility. Paid upon completion and approval of the energy model, the rebate is 50 per cent of the cost of the associated program participation fees, to a maximum of \$15,000.

### Airtightness rebate

The airtightness rebate encourages you to include airtightness testing during and after construction and feed the results back into the energy model. The mid-construction test should be performed after the air barrier component of the building envelope is installed to help identify any problem areas while they're still accessible and lead to a more energy-efficient and comfortable building. The final test is performed after construction is fully completed and the energy model updated to provide a more accurate understanding of how the building performs.

For each stage (mid-construction and post-construction test) you may be eligible to receive 75 per cent of the cost of the airtightness test, to a maximum of \$5,000 per test. (Note: If multiple tests are performed in one stage while an issue is being investigated and remediated, the total cost of all tests can be submitted for reimbursement.)

### Testing requirements include:

- Airtightness tests must be performed (according to BCBC Part 10.2.3.5.): ASTM E 779, "Standard test method for determining air leakage rate by Fan Pressurization", or USACE Version 3, "Air leakage test protocol for building envelopes."
- Tests must use an induced air pressure of not less than 75 Pa.
- Results of the airtightness tests must be reported to FortisBC, not just whether it passed or failed requirements.
- Post-construction airtightness test results must also be entered into the final energy model using the procedure outlined in the [City of Vancouver Energy Modelling Guidelines](#).

## How rebates are paid

The rebates are payable in two or more instalments.

### 1. Energy model review and invoice submission

Once an energy model is reviewed and approved, the first instalment of the capital incentive is paid, which is equal to 10 per cent of the total capital incentive, as verified by the model, to a maximum of \$25,000.

For an additional energy model rebate, submit the invoice for the energy model and receive 50 per cent of the associated program participation fees, up to a maximum of \$15,000.

Both of these incentives are paid out at the energy modelling phase.

### 2. Project completion

The remaining 90 per cent of the capital incentive rebate is paid after the building construction and commissioning is complete, subject to a successful site inspection to confirm that the ECMs were installed as described in the energy model.

### 3. Airtightness testing

If airtightness testing has occurred mid-construction and post-construction, rebates are paid after the results of the test and the invoice or progress draw are submitted to FortisBC for review.

These should be submitted after each stage for an airtightness rebate equivalent to 75 per cent of the cost of each test, up to a maximum of \$5,000.

# Capital incentive rebate calculation examples

## Example 1

A 120,000 sq. ft. office building is constructed in Burnaby and is subject to the BC Energy Step Code. The plan for the building is to use natural gas condensing rooftop make-up air units to supply the majority of space heating and ventilation, as well as centralized natural gas condensing water heaters for domestic hot water. The proposed building achieves Step 3 of the BC Energy Step Code.

Area = 120,000 sq. ft.

Incentive factor = \$1.60/sq. ft. (Step 3)

Calculation = 120,000 sq. ft. X \$1.60/sq. ft. = \$192,000

### Energy model completion

(10 per cent of total)

**\$19,200**

### Project completion

(remaining 90 per cent)

**\$172,800**

## Office building

120,000 sq. ft.

Step Code 3 (\$1.60/sq. ft.)



## Example 2

A 100,000 sq. ft. commercial building is built in Kelowna and is not subject to the BC Energy Step Code (see Path 2 table). Natural gas and electricity will be supplied by FortisBC. An energy study is conducted that suggests that it will be built to 22 per cent better than BCBC by implementing heat recovery chillers, LED lighting with advanced occupancy controls and heat recovery.

Area = 100,000 sq. ft.

Incentive factor = \$1.60/sq. ft. (20-30% better than BCBC)

Calculation = \$1.60/sq. ft. x 100,000 sq. ft. = \$160,000

### Energy model completion

(10 per cent of total)

**\$16,000**

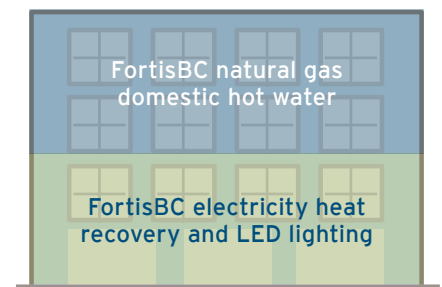
### Project completion

(remaining 90 per cent)

**\$144,000**

## Building

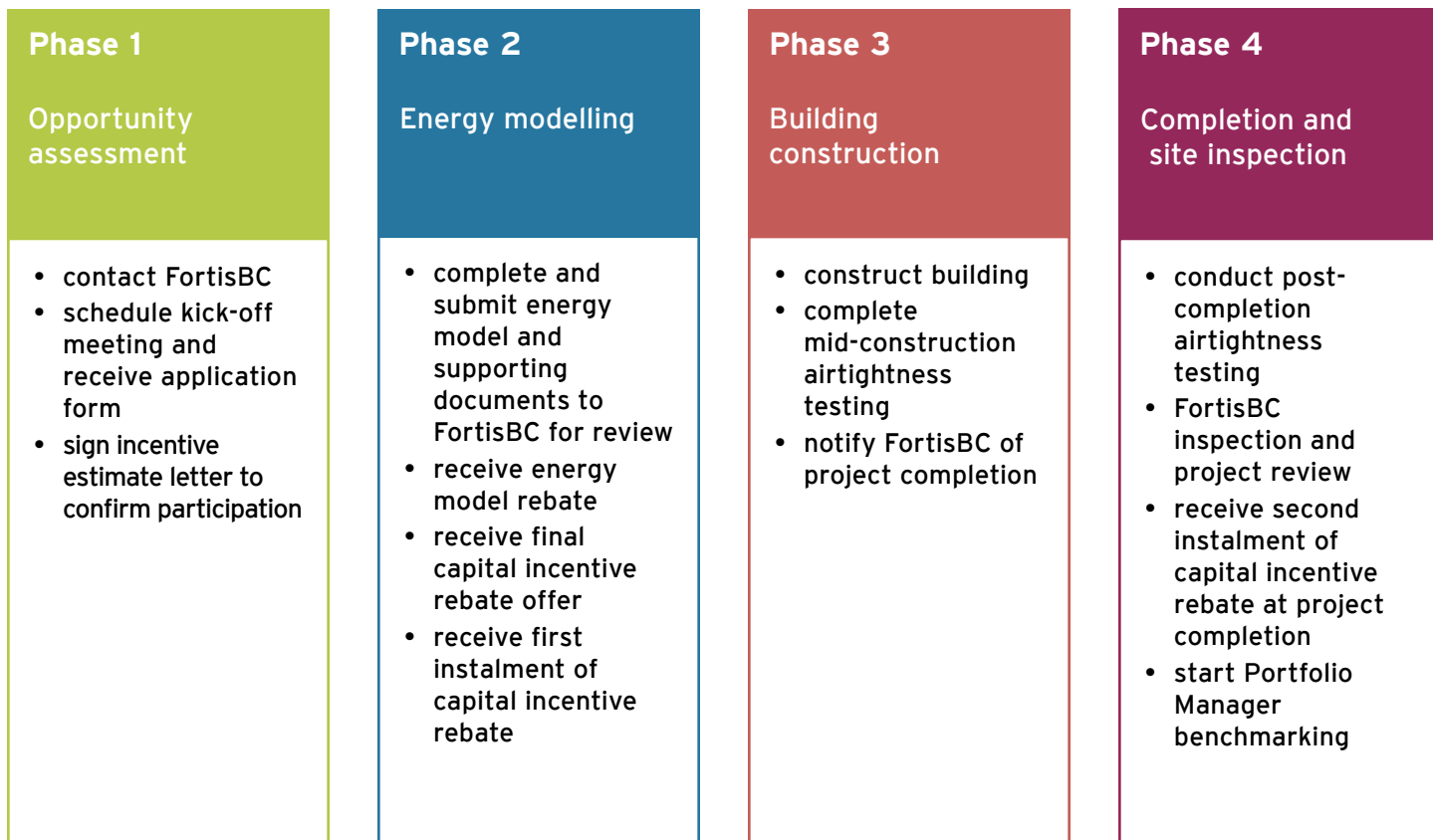
100,000 sq. ft.





# Program phases

The program comprises four distinct phases that, when successfully completed, will help your new building achieve enhanced energy efficiency, improved building performance, reduced greenhouse gas emissions and long-term cost savings. Here's how it works.



## Phase 1: Opportunity assessment

- Step 1:** Contact your FortisBC key account manager, energy solutions manager or technical advisor to discuss your project. See the Contact us section for details.
- Step 2:** Have your consultant or design team prepare initial estimates of building performance. Submit a thermal energy service provider form to FortisBC, if applicable.
- Step 3:** Schedule a project kick-off meeting between you, your design team (including the engineering consultant who is conducting the energy model study) and FortisBC.
- Step 4:** During the kick-off meeting you'll review the program, initial project estimates and receive rebate estimates. We'll provide you with an application form.
- Step 5:** You decide whether or not to proceed. If participating, sign the incentive estimate letter. Construction must be completed within five (5) years.

## Phase 2: Energy modelling

- Step 1:** Your consultant completes the energy model.

### For buildings subject to BC Energy Step Code

- Step 2A:** The consultant models the designed TEUI performance of your building as per the program guidelines and [City of Vancouver Energy Modelling Guidelines](#), and outlines the building features required to achieve it. The results are provided to you for review.

**Step 3A:** Your consultant completes the energy model summary template for your building design, and forwards it and the energy model report to FortisBC. The thermal bridging guide and drawings (architectural, mechanical and electrical) are also required.

### For buildings not subject to BC Energy Step Code

**Step 2B:** The consultant models the proposed and reference building per the program modelling guidelines and NECB (National Energy Code for Buildings), according to the year for which the permit has been pulled. They should model to the NECB to design a higher performance building than required by BCBC. The results are provided to you for review.

**Step 3B:** You or your consultant completes the energy model report and forwards it to FortisBC. You will also need to submit the NECB energy model, energy model summary, thermal bridging guide and drawings (architectural, mechanical and electrical).

### For all buildings

**Step 4:** FortisBC completes final review of project and issues the final incentive offer along with the first 10 per cent instalment of your capital incentive rebate and the energy model rebate.

## Phase 3: Building construction

**Step 1:** Construct your building according to the energy model. The building must be completed within five (5) years of signing the incentive estimate letter.

**Step 2:** Complete mid-construction airtightness testing, if applicable, and submit invoices and results to FortisBC.

**Step 3:** When the building is complete and commissioned, complete post-construction airtightness testing and schedule a site inspection with FortisBC.

The project completion rebate is provided within 90 days of FortisBC completing the site inspection and reviewing all related documentation from Phase 3.

## Phase 4: Completion and site inspection

**Step 1:** FortisBC conducts a site inspection.

**Step 2:** FortisBC conducts final review. If any of the key energy-efficiency features or other major inputs to the energy model are found to have changed substantially, then we may require additional modelling to assess the final building performance and will amend the project completion rebates accordingly. Program participants will be responsible for completing the additional energy modelling.

**Step 3:** If applicable, provide post-construction airtightness test results and invoices to FortisBC for review and issuing of airtightness testing rebate.

**Step 4:** FortisBC provides the remaining project completion capital incentive rebates.

**Step 5:** Report the building's energy use to [ENERGY STAR® Portfolio Manager®](#) for three years post commissioning.

**Step 6:** FortisBC may also conduct periodic inspections for up to three years after building commissioning.

# Frequently asked questions

## **Q. Why does FortisBC want us to reduce energy use?**

A. We're committed to helping our customers improve their energy efficiency and develop innovative energy solutions to help reduce greenhouse gas emissions and support the province of B.C.'s climate action goals.

## **Q. Can I receive FortisBC product rebates if I'm participating in the Commercial New Construction Performance Program?**

A. You may either participate in the Commercial New Construction Performance Program or receive rebates through our individual product rebate programs for your project if these measures are not included in your energy model (e.g. food service equipment).

## **Q. What happens if I want to change any of the ECMs and/or building features or add a new one to my project?**

A. First, notify us. The program requires you to advise us promptly of any proposed changes to the ECMs that either eliminate or substantially change their design during the course of the design, tender or construction of such measures. Second, as long as the ECMs still target the same end uses and achieve the same or greater energy savings, no changes will be necessary to the final incentive letter. If however, the changes target different end uses or result in different energy savings, the approved energy model may need to be updated to reflect these changes. We will pay the remaining post-completion incentive based on the pro-rated amount of energy savings that result from the updated energy model. You are responsible for the cost of revising the energy model and incentive adjustments may be made at FortisBC's sole discretion.

## **Q. I've applied for additional funding to support energy efficiency through another funding program (e.g. federal grant, another utility or government program). How does this impact the funding I will receive from FortisBC?**

A. You must notify us in writing if you receive contributions or contribution commitments from a third-party organization. In the event the combined total of FortisBC funding and third-party contributions exceed 100 per cent of the FortisBC-approved amounts, we will adjust the funding or, if already paid, you will be required to repay us for the full amount of the excess within 30 days of receiving the notice to repay.

## **Q. What modelling software can I use to develop the energy model?**

A. Consultants are free to choose the modelling software as long as it meets the [City of Vancouver Energy Modelling Guidelines](#) (for BC Energy Step Code buildings) and the [National Energy Code for Buildings \(NECB\)](#) (for non-BC Energy Step Code buildings). Note: energy models and energy model outputs need to be provided to us for review.

## **Q. How accurate are the energy models in predicting actual energy performance?**

A. The energy performance outlined in energy models serve as a standardized comparison between similar buildings for regulatory purposes. Actual energy performance may vary significantly from the energy model based on occupancy, occupant behaviour, tenant end-uses, operation and maintenance and weather, among many other factors.

## **Q. How is the incentive administered for multi-phase projects?**

A. For projects with multiple phases that may be completed in different years, the incentive and scope of the energy model will be based on all the phases and occupancy permits issued in a calendar year or completion of all phases if one energy model is used. In all cases, the incentive is limited to one incentive per project, to a maximum of \$500,000.

## **Q. Are projects connected to district energy systems eligible?**

A. Projects with district energy systems will be accepted on a case-by-case basis. They must use natural gas as the primary heating source.

## **Q. How large does my building need to be to participate in the program?**

A. The program requires that any participating Part 3 building have an indoor floor area that is greater than 50,000 sq. ft. Smaller buildings can still receive incentives through FortisBC product rebate programs. For more information, contact your [key account manager, energy solutions manager or technical advisor](#).



## Contact us

We're here to work with you to achieve better energy efficiency and reduce greenhouse gas emissions in your project, helping to build a healthier British Columbia. For more information on this or other FortisBC programs, please contact your [energy solutions manager, key account manager or technical advisor](#) to discuss your project.

Don't know who your account manager or technical advisor is?

Call **1-866-884-8833**

Email [customdesign@fortisbc.com](mailto:customdesign@fortisbc.com)

Visit [fortisbc.com/newconstructionfunding](https://fortisbc.com/newconstructionfunding)