Corporation of the City of
NEW WESTMINSTER

# REPORT
## *Climate Action, Planning and Development*

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| **To**: | Mayor Johnstone and Members of Council | **Date**: | July 10, 2023 |
| **From**: | Jackie Teed<br>Acting Director of Climate Action, Planning and Development | **File**: | 09.1740.20 |
| | | **Item #**: | 2023-487 |

**Subject:** **Proposed timeline to advance requirements of the Energy Step Code and the Zero Carbon Step Code for new buildings**

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## RECOMMENDATION

**THAT** Council direct staff bring forward for Council's consideration a bylaw amending Building Bylaw No 8125, 2019 to implement a two-option framework for Part 9 Buildings, requiring Step 5 of the Energy Step Code or Step 4 with Emissions Level 4 (Zero Carbon Ready) of the Zero Carbon Step Code, beginning January 1, 2024.

**THAT** Council direct staff to require a Measure Only Carbon Performance for Part 3 Buildings beginning January 1, 2024.

**THAT** Council direct staff to engage with interested parties to secure feedback on the supports needed to implement proposed targets in 2025 and 2027 to reach the highest steps of the Energy Step Code and Zero Carbon Step Code by 2030.

**THAT** Council direct staff to explore policy, regulatory and/or incentive options to facilitate electric heat pumps, over electric resistive baseboards, in new construction.

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## PURPOSE

To obtain Council direction to bring forward a bylaw amending Building Bylaw No 8125, 2019 to implement a two-option framework for Part 9 Buildings, requiring Step 5 of the Energy Step Code or Step 4 with Emissions Level 4 (Zero Carbon Ready) of the Zero Carbon Step Code, and Measure Only for Part 3 buildings beginning January 1, 2024. Also, to obtain council direction to engage with interested parties on the implementation

timeline of the Energy Step Code and Zero Carbon Step Code with proposed targets in 2025 and 2027 and to explore options to facilitate installation of electric heat pumps in new construction.

## SUMMARY

The Province has included the BC Energy Step Code (ESC) and the BC Zero Carbon Step Code (ZCSC) in the BC Building Code as opt in tools for Local Governments to advance energy efficiency and reduce carbon emissions in their communities ahead of the Provincial timeline for implementation**.**

Based on previous direction by Council this report recommends a two option framework to advance the ESC and ZCSC for Part 9 small residential buildings beginning January 1, 2024, with a focus on increasing energy efficiency and zero carbon climate resilient new buildings. City staff recommend a phased implementation of ESC and ZCSC to reach the highest steps in advance of the Provincial timeline. City staff propose to engage with interested parties to better understand what supports are needed by the building community to enable implementation of both the ESC and the ZCSC targets proposed for 2025 and 2027.

## BACKGROUND

The BC Energy Step Code was introduced in 2017 as an opt-in better than base code energy efficiency standard for new buildings (Attachment 1). Local Governments can choose to adopt levels of the Step Code into their Building Bylaws, in advance of the Provincial timeline, which the City has done.

On February 25, 2019, Council adopted Energy Step Code requirements for new Part 9 and Part 3 buildings through amendments to the Building Bylaw. The current requirement for Part 9 and Part 3 multi-unit residential buildings is Step 3.

At the July 11, 2022 Council meeting (report Attachment 2), Council adopted the following motion which supported developing a two option framework allowing a reduced Step in the Energy Step Code when building using a low carbon energy system (LCES):

> *That Council direct staff to proceed with work on the acceleration of the Energy Step Code for single detached dwellings in 2023 using a two option framework.*

At the August 29, 2022 Council meeting (excerpt Attachment 3), Council supported the use of LCES as a means to advance electrification of new buildings.

Building Bylaw No. 8125, 2019 was amended by Council at the April 3, 2023 meeting (Attachment 4) to align with the requirements of the BC Energy Step Code (ESC) and the introduction of the BC Zero Step Code (ZCSC) which was anticipated to come into effect May 1, 2023. A LCES definition was not included in the bylaw amendment.

On May 1, 2023, the Province included an opt-in Zero Carbon Step Code (ZCSC) into the BC Building Code, in addition to the existing Energy Step Code (ESC). The ESC and the ZCSC are separate but complementary regulations.The ESC addresses the energy-efficiency performance of new buildings, whereas the ZCSC targets the carbon-emissions performance. Similar to the ESC, local governments can choose to adopt into their Building Bylaws a level of carbon performance in the ZCSC, and also eliminates the need for local governments to develop definitions for LCES.

Regional Implementation

At this time, a number of municipalities have Council direction to engage with the building community to establish a timeline to reach the highest steps of each step code:

- Victoria and Saanich have completed engagement and adopted a timeline which will reach the highest Carbon Performance of the ZCSC for Part 9 buildings by November 1, 2023, for Part 3 Multi-unit residential buildings 6 storeys or fewer by November 1, 2024 and for all Part 3 buildings by November 1, 2024, while following the Provincial timeline for the ESC.
- Burnaby Council at their May 8, 2023 meeting directed staff to engage with stakeholders using the timeline adopted by the City of Victoria and Saanich to reach zero carbon performance.
- City of Richmond, District of North Vancouver, District of West Vancouver and the City of North Vancouver have proposed or adopted the ESC and ZCSC in an approach similar to the one proposed in this report. The latter three are currently requiring Step 5 or Step 3 with Emission Level 3 (strong carbon) for Part 9 buildings and Step 4 or Step 3 with Emission Level 3 (strong carbon) for Part 3 residential buildings.

## DISCUSSION

BC Zero Carbon Step Code (ZCSC)

The ZCSC establishes carbon emission levels associated with the energy used by the building's systems. The addition of the ZCSC in the Building Code provides a clear definition and compliance pathway for Low Carbon Energy Systems (no longer needing definition by local governments) which supports electrification of new construction and reduction of GHG emissions.

Similar to the Energy Step Code (ESC), the Province has indicated the intent to incrementally increase the required level of the ZCSC (i.e. decreasing levels of greenhouse gas emissions) in future Building Code updates to meet the CleanBC target of Zero Carbon new buildings by 2030. ZCSC requirements are anticipated in the 2024 and 2027 building code updates, but it is unclear what carbon performance levels will be required at those milestones.

The ZCSC establishes Emission Levels, which includes a measure only option. The Emission Levels align with specified modelled performance values for an upper limit of greenhouse gas emissions from a new building. A detailed description of emission limits associated with each Emission Level is presented in Attachment 3. In general the requirements of the Emission Levels are:

- ***Emission Level 1 (****Measure-only****)*** – requires measurement of a building's emissions without reductions;
- ***Emission Level 2 (****Moderate carbon****)*** – in general requires electrification of either space heating or domestic hot water systems:
  ***Emission Level 3 (****Strong carbon****)*** – in general requires electrification of both space heating and domestic hot water systems; and
- ***Emission Level 4 (****Zero carbon* ready)– in general requires the full electrification of a building

Proposed Implementation

Staff recommends the City choose to adopt into the Building Bylaw an Emission Level (EL) in the ZCSC, to advance concurrently with the ESC ahead of the provincial timeline. This approach will serve two functions: 1) long term reduction of carbon emissions (ZCSC); and, 2) reduction of energy consumption (ESC). Staff recommends implementing the first set of requirements January 1, 2024 and proposes incremental increases in the ESC and ZCSC for 2025 and 2027, as detailed in Attachment 5. The proposed timeline is in alignment with the required action to meet the City's Climate Emergency Declaration targets for emission reductions outlined in the Community Energy and Emissions Plan 2050, and in alignment with the direction set by Council in July 2022.

The proposed requirement beginning January 1, 2024 would use a two option framework for Part 9 Buildings, and Measure Only for Part 3 buildings, as detailed below.

*A. Two option framework for Part 9 buildings*

Staff proposes permitting Part 9 buildings two options to: 1) build to a higher step in the ESC (i.e. Step 5 with Measure Only); or, 2) build to a lower step with an increased carbon performance tier (i.e. Step 3 with EL4 Zero Carbon Ready). Introducing a two option framework ensures that the building community have the option to incrementally increase their building standards, while having clear indication of what will be required in future adoption years. While the two option framework is in place, capacity building programs (delivered through the Energy Save New West platform) would continue to be available to industry partners in order to support their ability to build homes to the highest standards of the ESC and ZCSC.

Building Permit applications received before Jan 1, 2024 will be processed under existing bylaws. Allowances will be made for in-stream Re-zoning and Development Permit applications.

*B. Measure only for Part 3 buildings*

Staff proposes adopting the Measure Only requirement for Part 3 buildings in the ZCSC. This can be calculated using data already required to be collected in compliance with the ESC. The addition of the Measure Only requirement would be a simple entry point to support education and capacity building within the construction industry towards using the new metrics to calculate Emissions Levels.

Electric Heating Options and Climate Resilience

The ZCSC does not provide guidance on what technology should be installed in order to meet the specified emission limits associated with each carbon performance level. Consideration should be made for the use of electric heat pumps compared to resistive electric baseboard heating to meet the carbon performance requirements. Electric heat pumps are more energy efficient (reduce load on electric grid) and less expensive to operate (reduce energy bill costs for homeowner) compared to resistive electric baseboard heating. Electric heat pumps also provide cooling which will increase resilience of the home as the City adapts to warmer summers and increasing frequency of extreme heat events. The City's current Heat Response workplans (and proposed accelerated workpans for 2023) are focused on existing buildings. This initiative is focused on new construction, which will reduce the future need to conduct cooling system retrofits on buildings being built today.

The City of Burnaby through the use of regulations has, in some cases, required the use of electric heat pumps instead of resistive electric baseboard heating. Staff recommends exploring further if it is possible for New Westminster to similarly encourage or require the use of heat pumps in new construction allowing for mechanical cooling and reducing the demand on the electrical system.

Currently the Province is exploring options in the next Building Code update to include a temperature limit requirement in one living space in new construction to minimize over-heating during extreme weather events. At this time, there is no clear indication of when new regulations may be released.

## CONSULTATION

On June 20th, 2023 staff presented the proposed implementation timeline for the ESC and the intention of the Province to develop an implementation timeline for the ZCSC, to the Utility Commission, which provided unanimous support and the following feedback:

- There is clear rational to skip over EL3 (Strong carbon) and move from EL2 (Medium Carbon) to EL 4 (Zero Carbon ready) as an adoption pathway when an

incremental approach is applied strong carbon may only allow for fossil fuel cooking, which results in high utility connections fees for low fuel delivery.

- Consider accelerating the carbon performance requirements for Part 3 buildings. Identify during the engagement process whether the carbon performance levels of current Part 3 building projects already align with a defined ZCSC Emissions Level.
- Engage with affordable housing providers to ensure requirements do not result in barriers to building affordable housing.

## NEXT STEPS

Staff would develop an engagement plan focused on reconnecting with builders/ developers and other interested parties to seek current feedback on the proposed ESC and ZCSC implementation timeline for 2025 and 2027. It is anticipated engagement will begin in late summer and be completed in late Fall 2023.

Research and stakeholder engagement will focus on:

- Identifying the building community needs through each phase of implementation
- Understanding incremental costs to build to higher steps in each code
- Continuing to support industry and staff through training and capacity building
- Identifying other gaps and needs to support implementation

Outcomes from engagement would be used to develop ongoing capacity building programming and training within the building community and with staff to improve compliance and acceptance rates.

## FINANCIAL IMPLICATIONS

Implementation of the ESC and ZCSC has been identified in the Climate Action Team 2023 work plan in alignment with the CEEP implementation actions. $75,000 of the $515,000 CEEP 2.0 implementation 2023 capital budget has been allocated to advance adoption of the ESC and ZCSC. Up to $10,000 of those funds will be used to support stakeholder engagement and introductory industry training and education. The Building Department will continue to administer the program within their work plan including enhanced energy training within the 2023 budget. There are additional collateral benefits from ESC implementation along side ZCSC which reduce the energy demand of a building while ensuring long term connection to low-carbon fuel, respectively, which supports balancing electrical demand in our Electrical Utility, as we advance electrification to meet the City's climate emergency targets.

## INTERDEPARTMENTAL LIAISON

This report was prepared by the Climate Action Team in consultation with the Building Department and the Electric Utility.

## OPTIONS

The following options are provided for council's consideration:

1. That Council direct staff bring forward for Council's consideration a bylaw amending Building Bylaw No 8125, 2019 to require implement a two-option framework for Part 9 Buildings, requiring Step 5 of the Energy Step Code or Step 4 with Emissions Level 4 (Zero Carbon Ready) of the Zero Carbon Step Code, beginning January 1, 2024.

2. That Council direct staff to require a Measure Only Carbon Performance for Part 3 Buildings beginning January 1, 2024.

3. That Council direct staff to engage with interested parties to secure feedback on the supports needed to implement proposed targets in 2025 and 2027 to reach the highest steps of the Energy Step Code and Zero Carbon Step Code by 2030.

4. That Council direct staff to explore policy, regulatory and/or incentive options to facilitate electric heat pumps, over electric resistive baseboards, in new construction.

5. That Council provide alternative direction to staff.

Staff recommends Option 1, 2, 3 and 4.

## ATTACHMENTS

Attachment 1 - BC Energy Step Code
Attachment 2 - July 11, 2022 Council Report – Proposed ESC acceleration for single detached dwellings
Attachment 3 - Low Carbon Energy Systems Council Resolution, August 29, 2022
Attachment 4 - April 3, 2023 Council Report – Building Bylaw amendment
Attachment 5 - Proposed ESC and ZCSC implementation timeline

## APPROVALS

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