



Environment & Climate Advisory Committee Meeting

Energy Step Code: An Overview



NEW WESTMINSTER

Motion

THAT EnCAC encourage New Westminster City Council to adopt a CEEP which includes a plan to create regulations by 2023 in New West for new construction of single family dwellings that require builders to achieve level 5 of the STEP code, the highest standard for building energy efficiency, or if the builder uses a low-carbon (usually electric) system for heat and hot water, the STEP code is relaxed to level 3.

Summary of Committee Discussion

- Some municipalities already incentivize electrification (e.g. District of North Vancouver, West Vancouver and Vancouver).
- Saves expensive retrofit costs and provides better resiliency.
- Considering building envelope and system efficiency is key.
- Energy efficiency measures are key.
- Building Code changes will incorporate a greenhouse gas emissions intensity (GHGi) metric, to regulate fuel selection.
- Support for emerging energy efficiency and emissions reduction technologies is needed.

Climate Action Work Plan

- CAPD operating 70% under capacity; 50% reduction in work load.
- Adding work to the current work plan means other projects put on hold.
- Prioritized completion of the Community Energy and Emissions Plan for 2022.
 - CEEP will help reinforce/set a pathway for meeting climate emergency and seven bold steps targets.
 - BCBC changes are anticipated related to Step Code; delay will allow City to build on these with a more ambitious Step Code.
- If motion supported by the committee, staff will recommend to Council that this work be considered as part of the 2023 work plan.

Next Steps

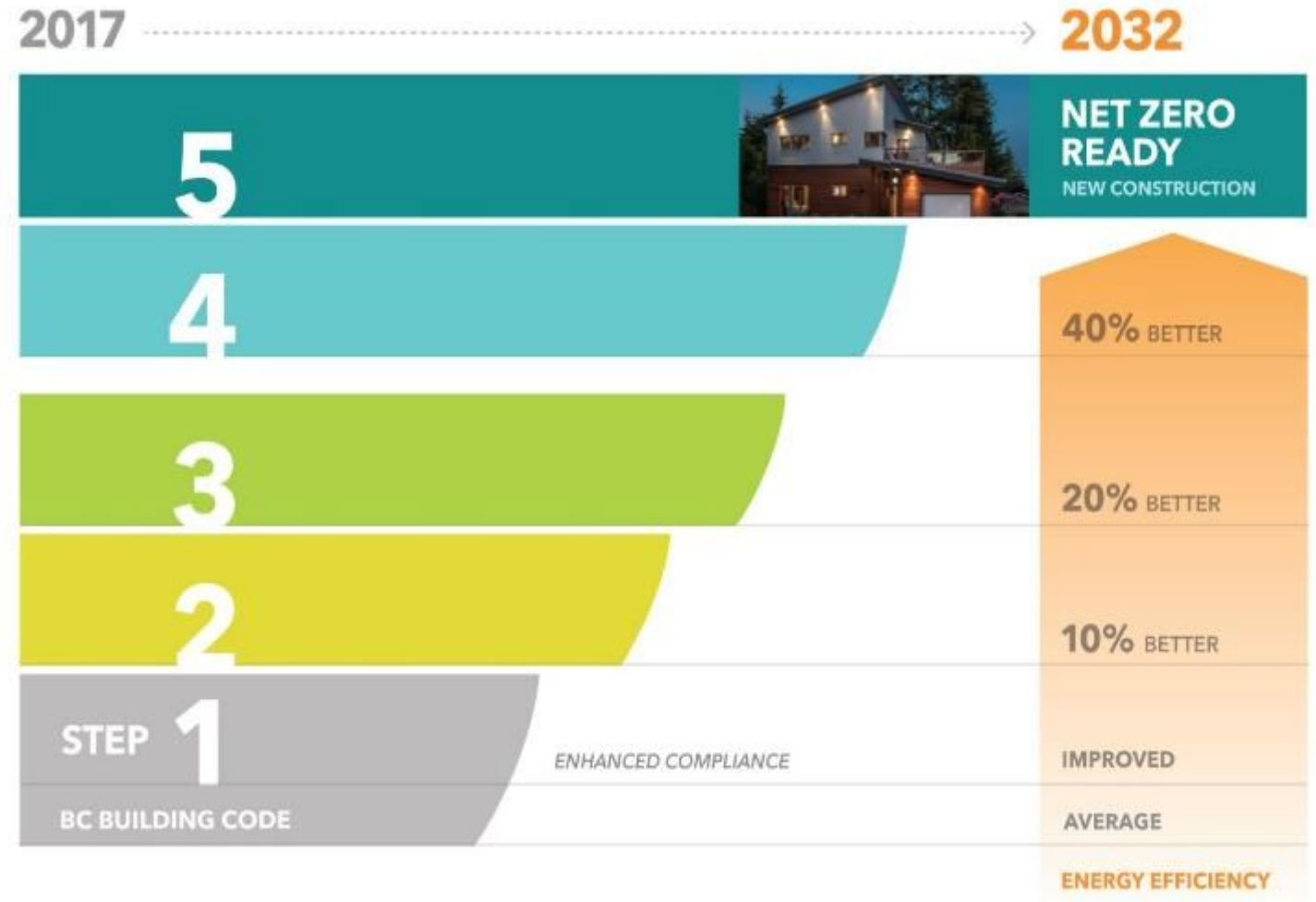
Once a motion is adopted:

- **Staff will assess the feasibility of implementing a two-option Step Code framework (Step 5 OR Step 3 with low carbon energy system).**
- **Report will be presented to Council summarizing the motion and related context.**
- **Council directs staff to undertake next steps.**

What is Energy Step Code?

An energy efficiency compliance path that is designed to drive steady increases in energy efficiency in new construction.

The Step Code has a tiered set of performance metrics that measure the building's heating needs, mechanical system efficiency and airtightness.



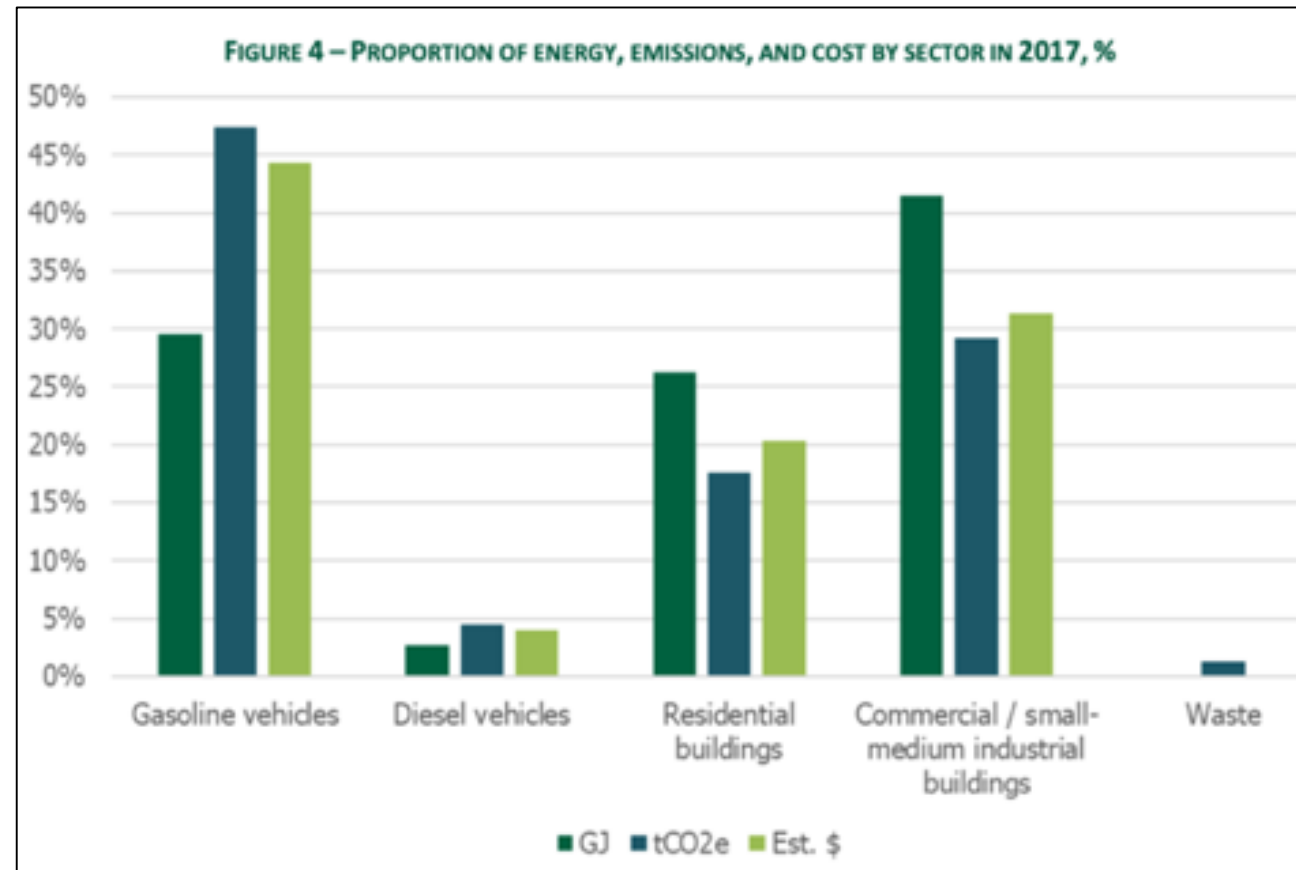
New Westminster's Step Code Requirements

CITY BUILDING BYLAW REQUIREMENT		
	<i>Building Permit applications filed on or after</i>	
Part 9 Residential	March 31, 2019	January 1, 2020
Single Detached and Semi-Detached Homes	Step 1	Step 3
Laneway and Carriage houses	Step 1	Step 2
Triplexes, Townhomes and Stacked Townhomes*	Step 1	Step 3
Part 3 Multi-Unit Residential	March 31, 2019	January 1, 2020
Wood-Frame Residential	N/A	Step 3 [OR] Step 2 with approved Low Carbon Energy System[†]
Concrete Residential		
Hotels/Motels [◇]		
Part 3 Commercial	March 31, 2019	January 1, 2020
Office	N/A	Step 2
Retail / Mercantile (Group D and E Occupancies)		

Key Drivers for Emissions Reductions

Emissions from residential buildings accounted for 18% of the city's total community GHG emissions in 2017.

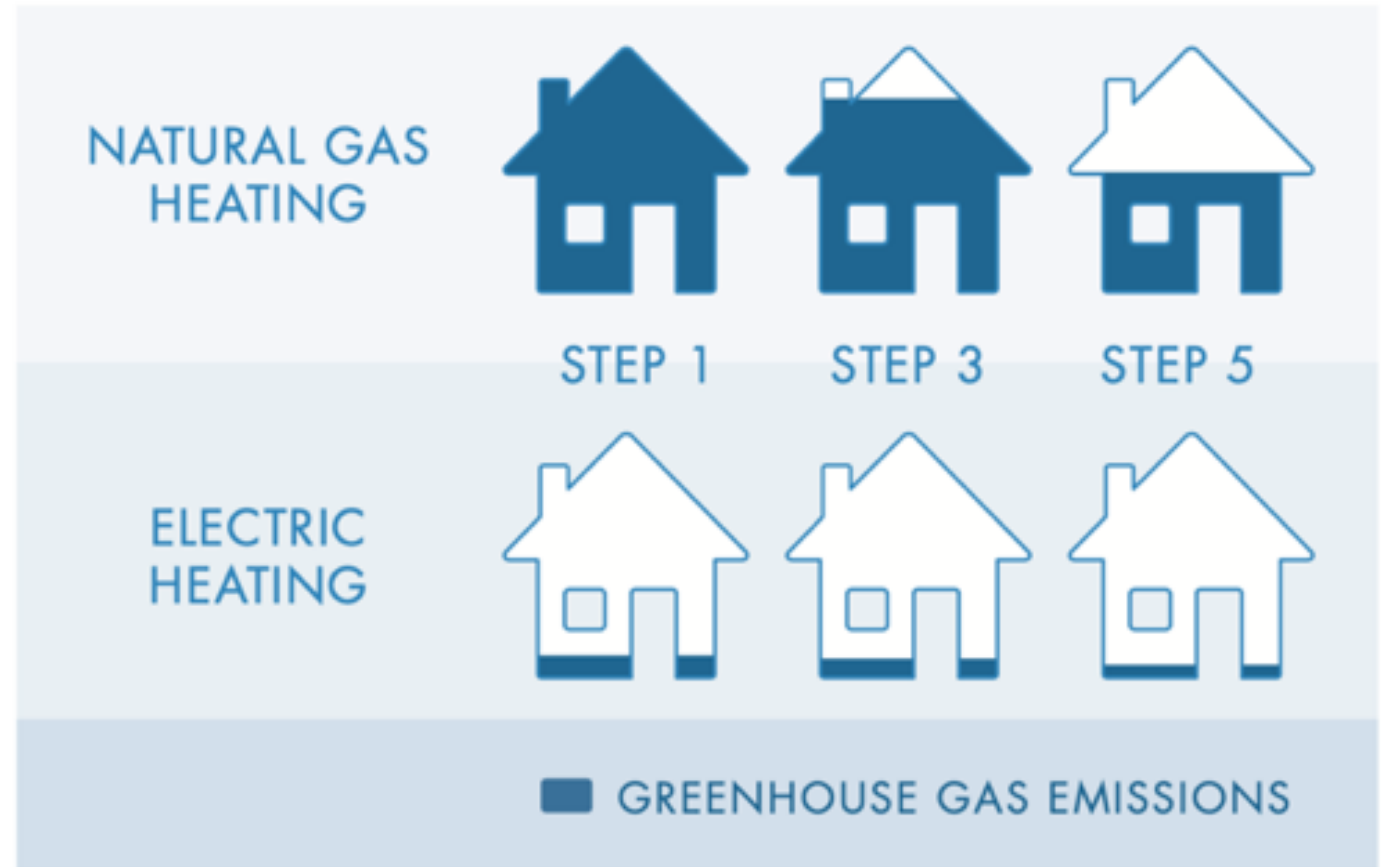
This is largely associated with natural gas consumption for heating residential homes (including single detached and multi-family).



The Case for Electrifying

Buildings with natural gas heating have a higher GHG emissions footprint than lower 'step' buildings that are completely electric (only because power in BC is from Hydro and a full environmental impact is not addressed).

Energy conservation is vitally important to reduce overall consumption and demand.



Adapted from Metro Vancouver original. Data source: BC Housing and the Energy Step Code Council 2018 report.

A Two Option Framework

Building Type	Building Permit Application			
Smaller Part 9 Residential	Late 2018	Early 2020	TBD	TBD
Townhomes & Low-rise Apartments	Step 1	Step 3	Step 5 or Step 3 with LCES	Step 5 or Step 4 with LCES
Single Detached Dwelling, Duplex & Other Residential	Step 1	Step 3	Step 5 or Step 3 with LCES	Step 5 or Step 4 with LCES

- Municipalities do not yet have the ability to regulate fuel source or domestic hot water.
- Two option Step Code framework:
 - supported by provincial policy & Step Code
 - incentivizes builders to adopt low carbon energy systems
 - provides builders with greater flexibility and supports building electrification.

What are other municipalities doing?

Step Code Schedule for Part 9 Buildings (Single Detached Dwellings, Duplexes & Triplexes)

Municipality	2021	2022	2025
West Vancouver	Step 5 <i>OR</i> Step 3 + LCES	Step 5 <i>OR</i> Step 3 + LCES	Step 5 <i>OR</i> Step 4 + LCES
Vancouver	Step 4 <i>OR</i> Step 3 + LCES	Step 5 <i>OR</i> Step 3 + LCES	Step 5 <i>OR</i> Step 4 + LCES
District of North Vancouver	Step 5 <i>OR</i> Step 3 + LCES	Step 5 <i>OR</i> Step 3 + LCES	Step 5 <i>OR</i> Step 4 + LCES

Key Considerations

- Building Code changes will incorporate a greenhouse gas emissions intensity (GHGi) metric to regulate fuel selection. Staff will explore how best to implement in New Westminster.
- High upfront costs for Step 5 can be leveraged to incentivize Step 3 plus low carbon energy system (LCES) option.
- No City procedures in place for processing applications using a LCES.
- Staff and Industry training, and capacity building is needed to advance higher performance buildings.
- Verification and inspection of low carbon energy systems is an industry wide challenge.
- Single detached dwellings are the simplest applications, and provide the City and community a great learning opportunity that can shape future policy.

Discussion

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Thank You!

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