City of Surrey
Energy Step Code and Climate Action

Virtual Builder Session Breakout – Dec. 8, 2020

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Agenda

1. Introductions – who's in the room? **Please click on link in Chat!**
2. Policy Context
3. Energy Step Code evolution and new directions
4. Approach under consideration
5. Questions

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Policy Context

Energy Step Code adopted July 2018 – in effect April 2019

Climate Emergency Declaration – Nov. 2019

Community GHG Reduction Targets – Net Zero before 2050

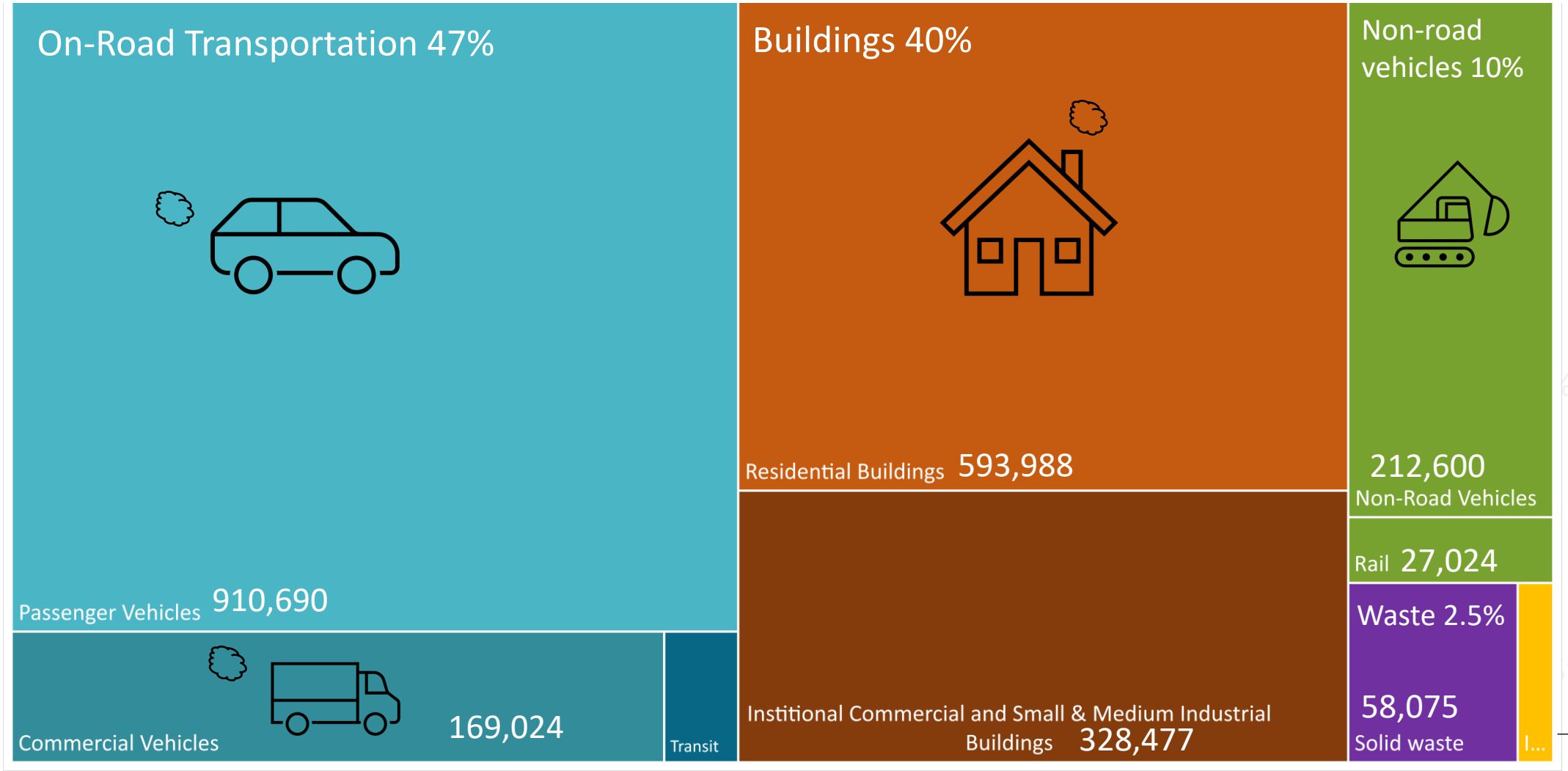
GHG Modelling and Climate Plan Update - in Progress

Energy Step Code Policy Update - Proposed Quick Action

Emissions Inventory - 2020

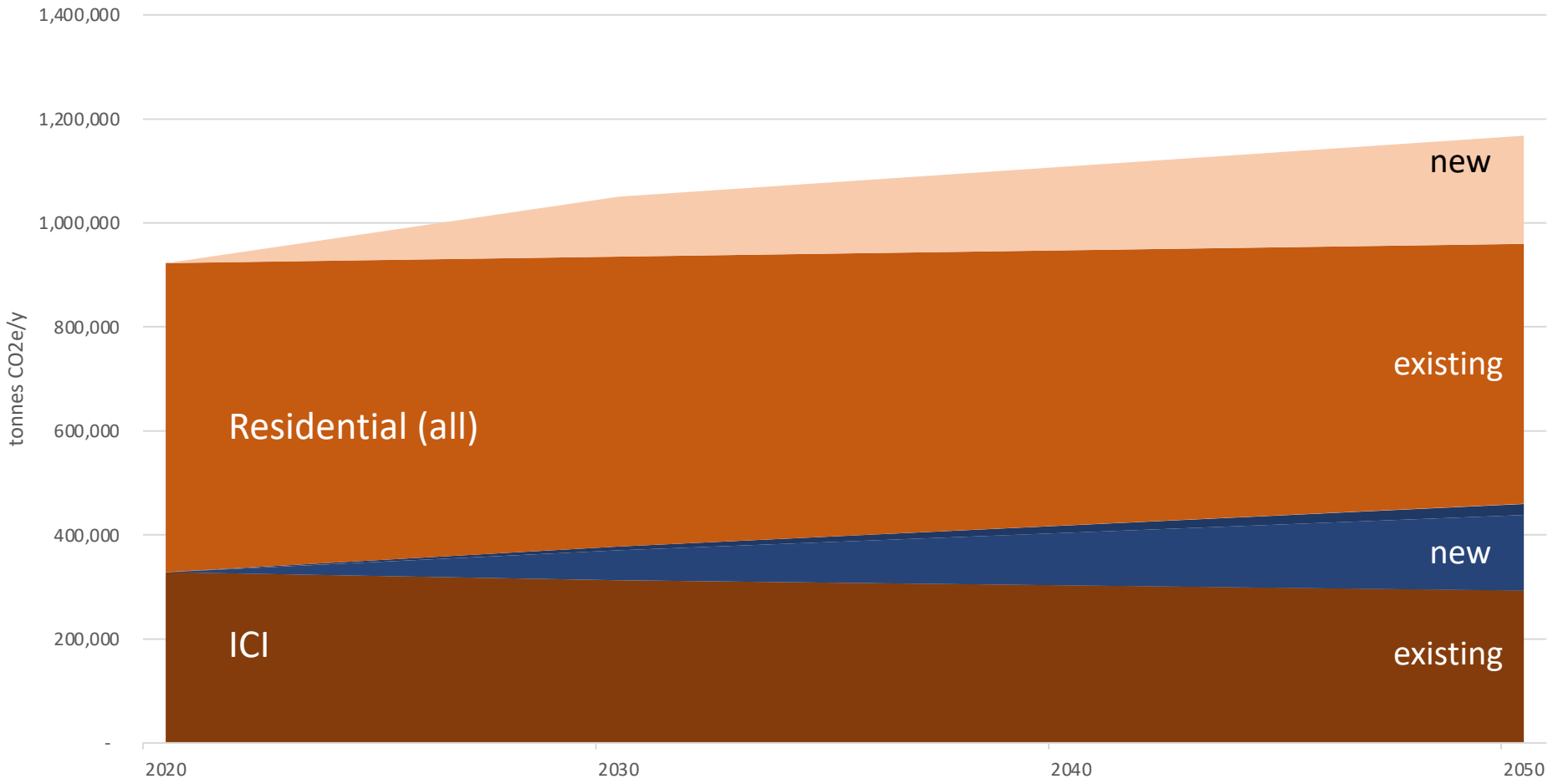
Total: 2.3M tonnes per year

*Preliminary results

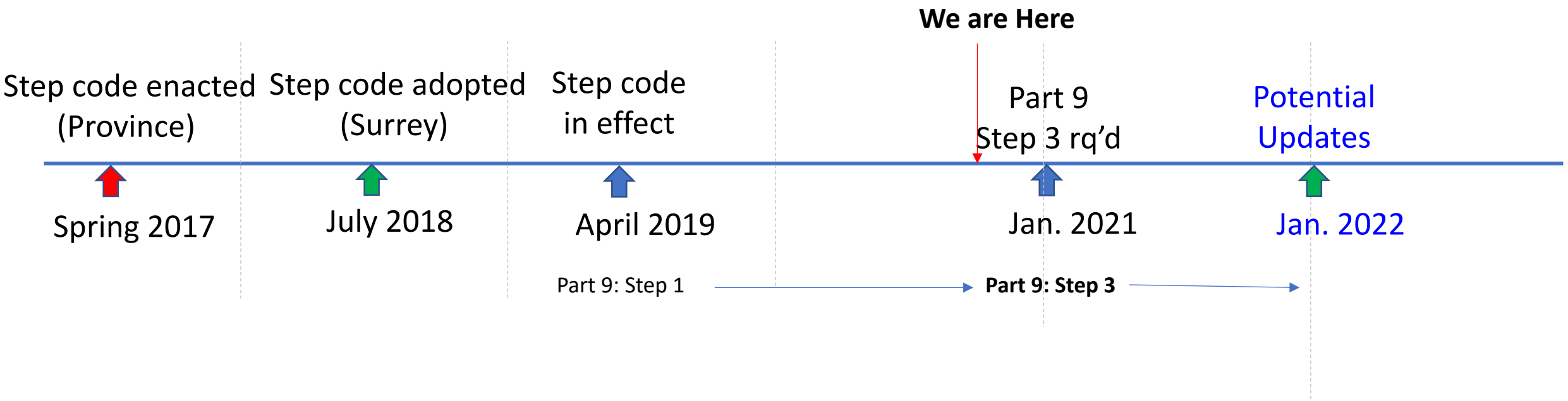


Business as Planned Emissions – 2020 to 2050

- Carbon Pollution from Buildings is projected to increase
- Will need massive retrofit program, and avoidance of new emissions, to reach net-zero targets



Surrey Step Code Timeline



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Surrey: Current Requirements

Current Requirements, as per www.surrey.ca/stepcode

	Building Bylaw		Future Anticipated	
	Apr. 1, 2019	Jan. 1, 2021	2023	2025
Part 9 residential	Step 1	Step 3	Step 4	Step 5
Part 3 residential	Step 3, or Step 2 with LCES*		Step 4, or Step 3 with LCES	
Part 3 Group D&E	Step 2		Step 3	

LCES = low carbon energy system*
Currently defined based on GHG intensity @ max. 6 kg/m2/y,
or connection to Surrey City Energy DES

Roadmap to Net-Zero Energy-Ready Buildings

Timeline for Energy Efficiency Regulatory Requirements in the BC Building Code

Here's what the province's CleanBC plan will mean for new-construction requirements.

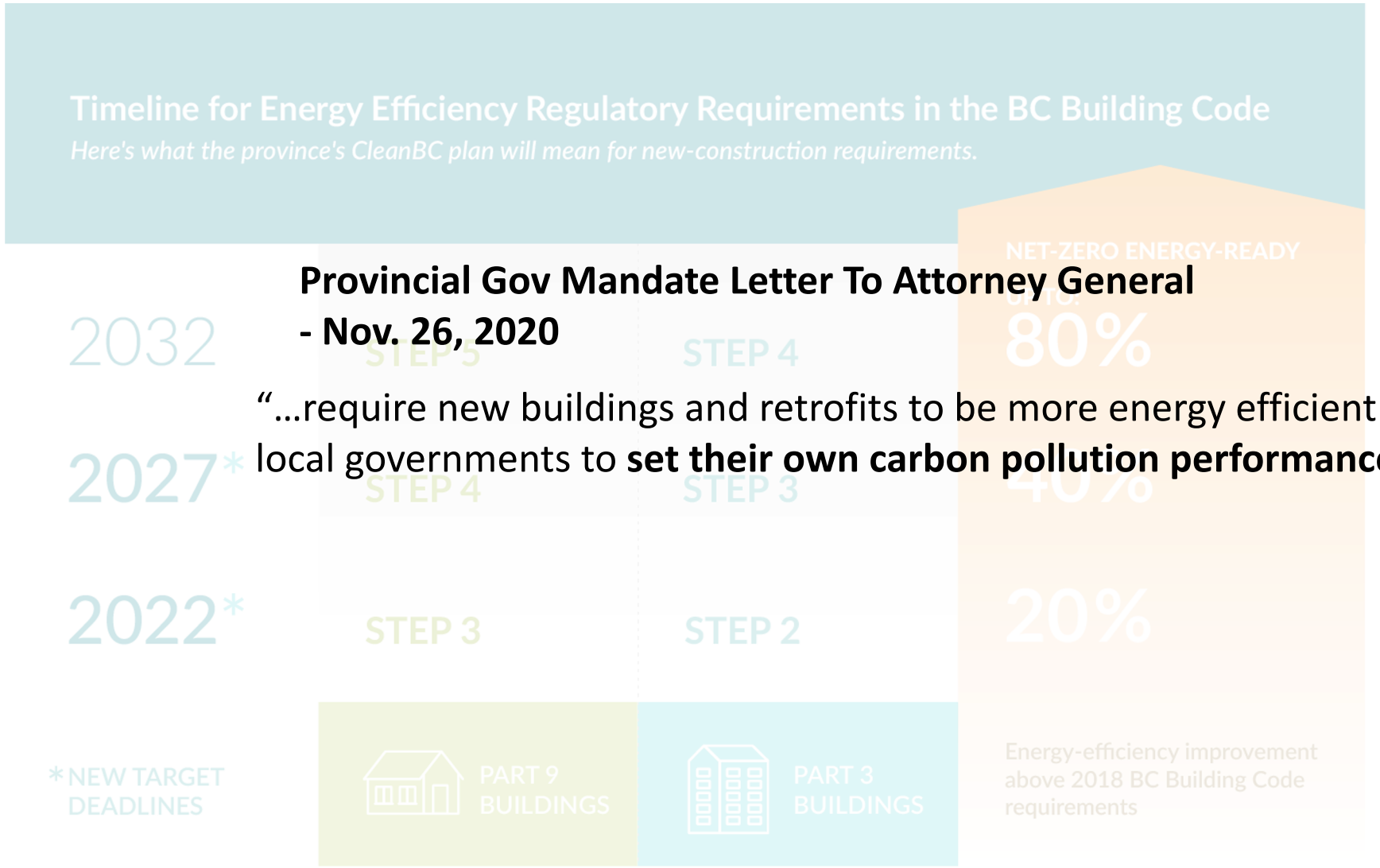
	PART 9 BUILDINGS	PART 3 BUILDINGS	NET-ZERO ENERGY-READY UP TO:
2032	STEP 5	STEP 4	80%
2027*	STEP 4	STEP 3	40%
2022*	STEP 3	STEP 2	20%

*NEW TARGET DEADLINES

Energy-efficiency improvement above 2018 BC Building Code requirements

ENERGY STEPCODE
BUILDING BEYOND THE STANDARD

Roadmap to Net-Zero ~~Energy-Ready~~ Buildings Emissions(?)

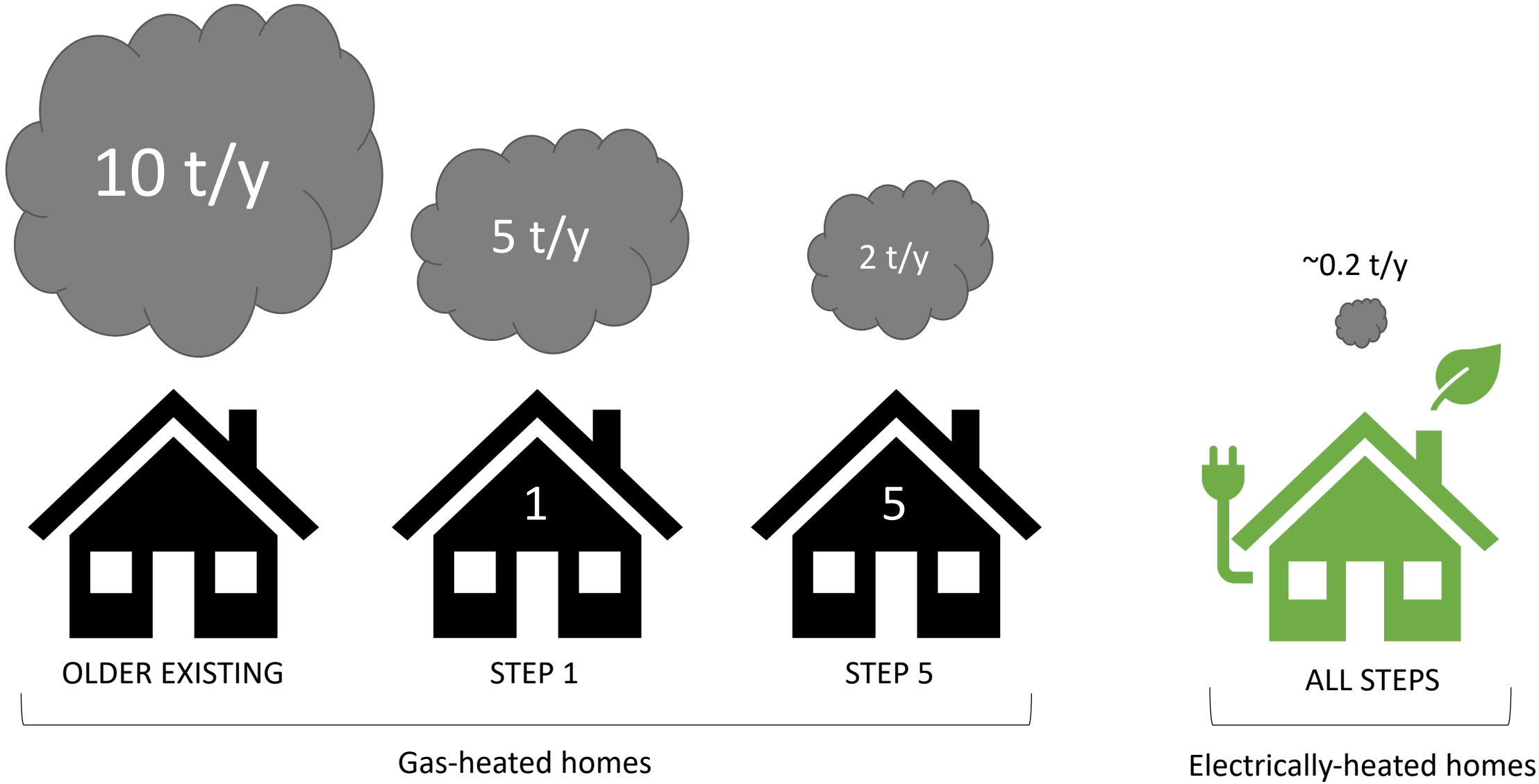


Provincial Gov Mandate Letter To Attorney General - Nov. 26, 2020

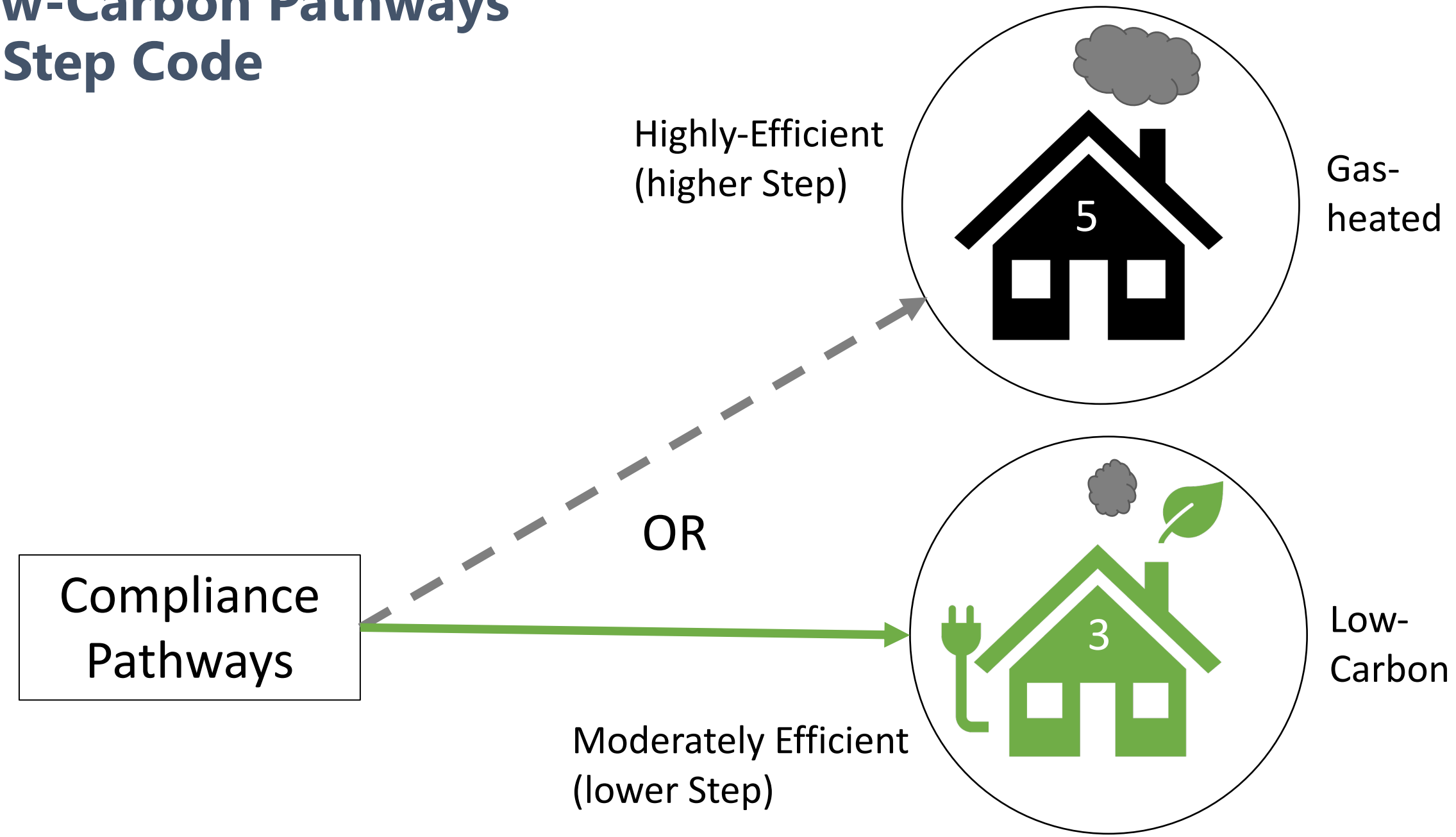
"…require new buildings and retrofits to be more energy efficient and cleaner by supporting local governments to **set their own carbon pollution performance standards** for new buildings."

https://news.gov.bc.ca/files/AG-Eby-mandate.pdf

Carbon pollution by Step and heating type (avg size Surrey SFD)



Low-Carbon Pathways in Step Code



Low-Carbon Pathways in Energy Step Code

Local Governments that have enacted this type of approach to date include:

- **Part 3:** Surrey, Vancouver, Burnaby, Richmond, New Westminster, Port Moody…
- **Part 9:** Vancouver, Dist. West Van, City of N. Van, Dist. Of N. Van, Victoria, Richmond

Surrey (Part 3 Residential): Meet Step 3, OR Step 2 with a “Low Carbon Energy System”

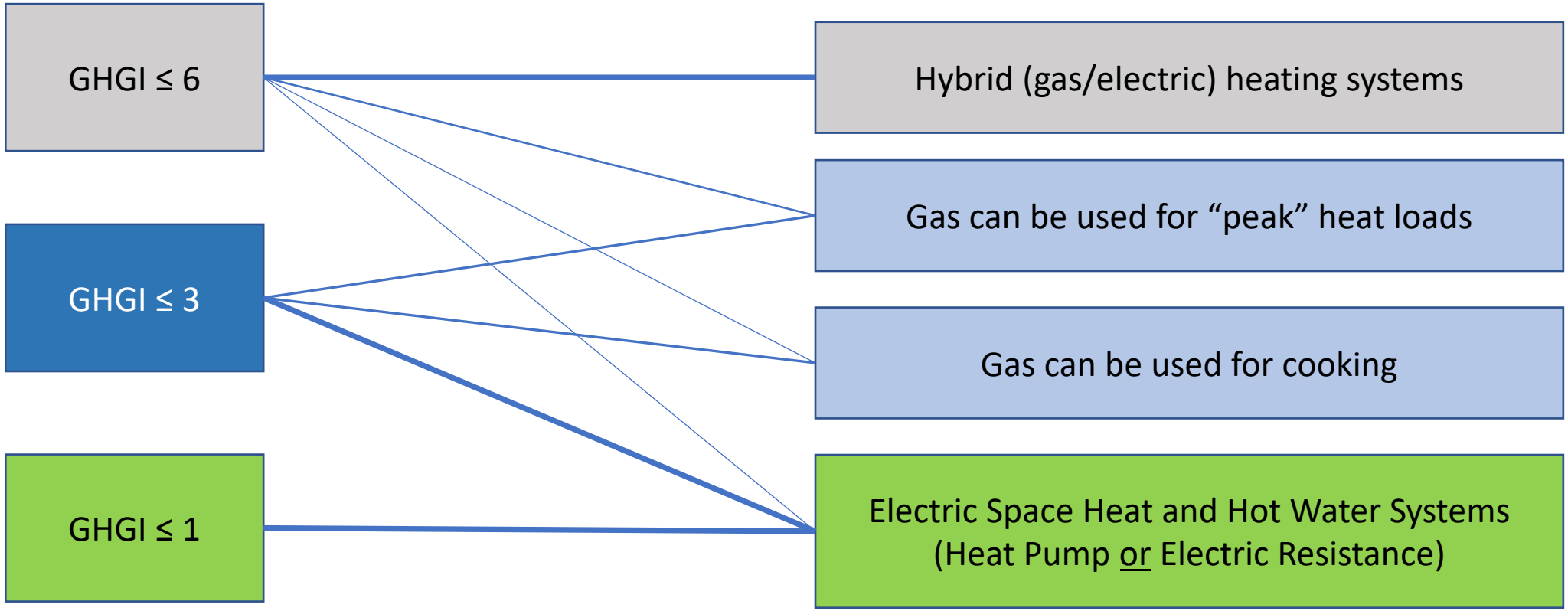
“Two Pathways Approach” is supported by provincial policy:

What is a low-carbon energy system (LCES)?

- *An energy system capable of providing the **primary source** of space and hot water heating using energy that **emits very little carbon pollution**, and meets the City's greenhouse gas intensity (GHGI) limits*.
- Thanks to BC's green electrical grid, this usually means electric heat.
- Electric systems can be in the form of electric resistance OR heat pump systems.
- Future GHGI Limits under consideration:

	2022	2025
Part 9 Residential	GHGI ≤ 3 kg/m2/y	All electric
Part 3 (All)	GHGI ≤ 3 kg/m2/y	GHGI ≤ 1 kg/m2/y

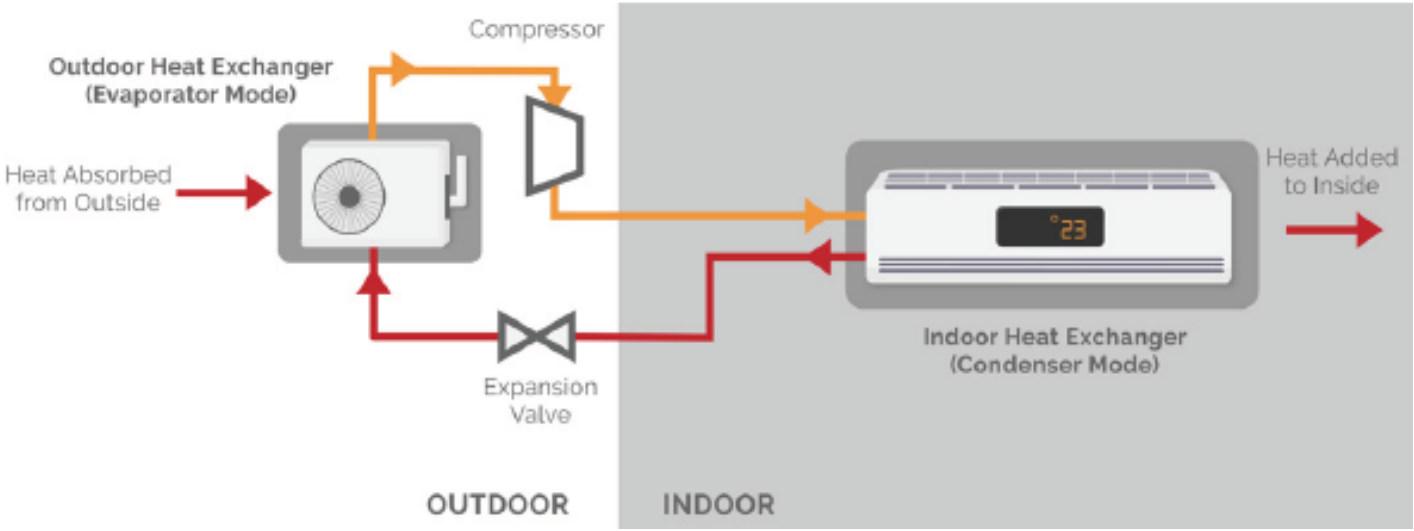
Effect of GHGI

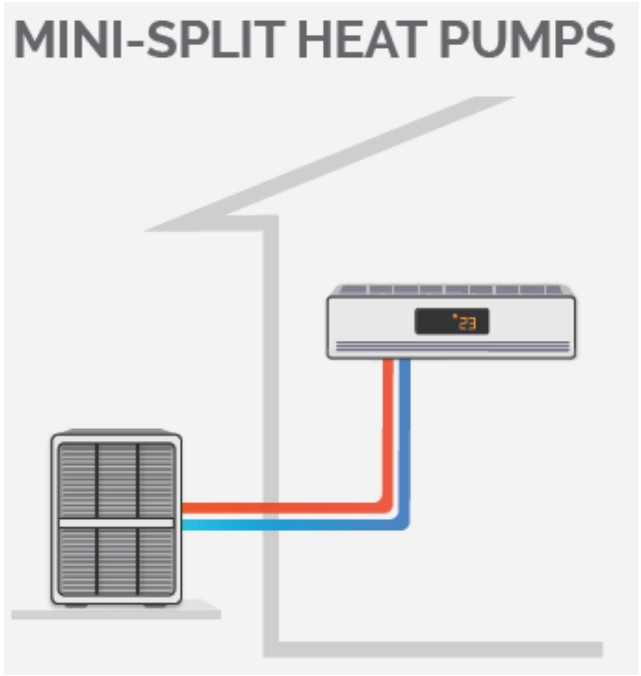


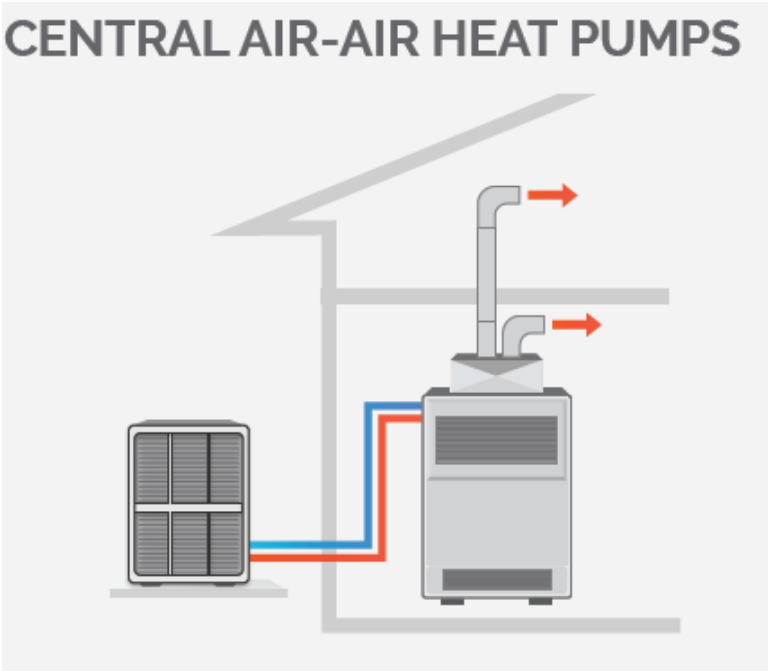
GHGI = greenhouse gas intensity

Heat Pumps

Heat Pumps



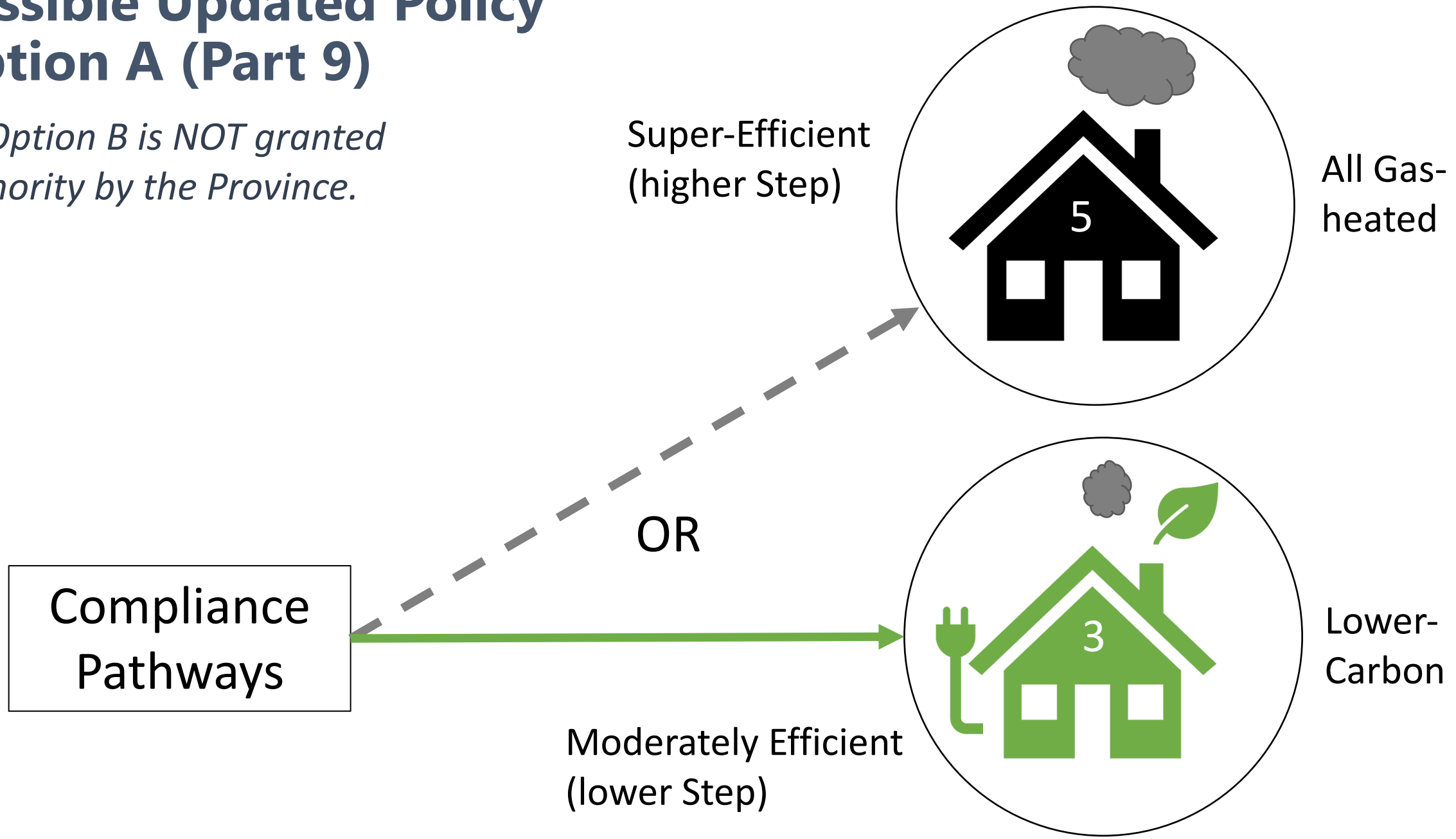




https://zebx.org/resources/#reports

Possible Updated Policy Option A (Part 9)

**If Option B is NOT granted authority by the Province.*



Possible Updated Policy Option B (preferred)

**If granted authority by the Province.*

Compliance Pathway

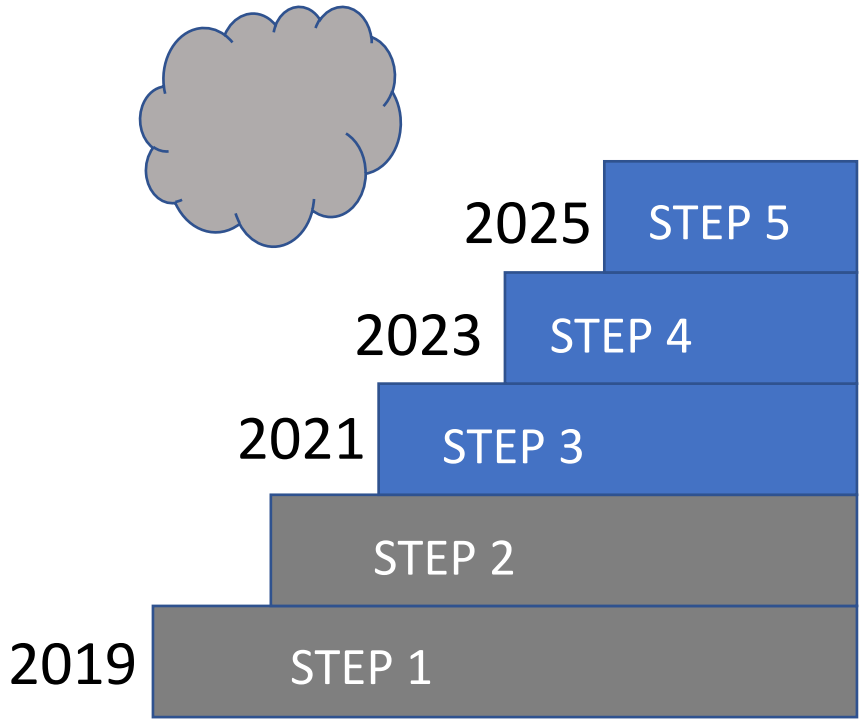
Moderately Efficient

Lower-Carbon

Part 9

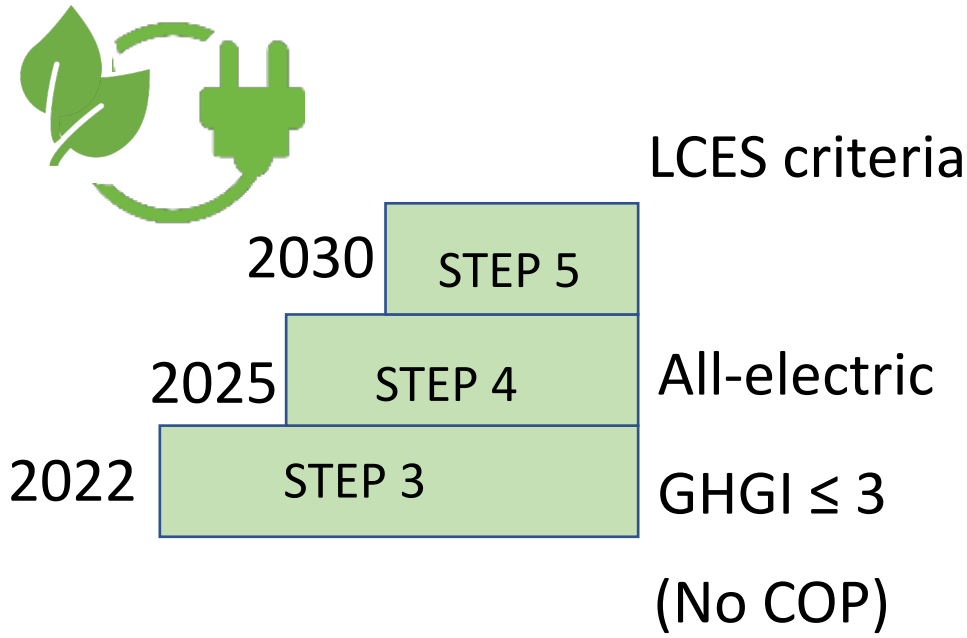
How it Started | Where it's Going

Efficiency Focused



LCES = Low-Carbon Energy Systems
GHGI = GHG intensity kg/m2/y
COP = Coefficient of Performance

Emissions Focused

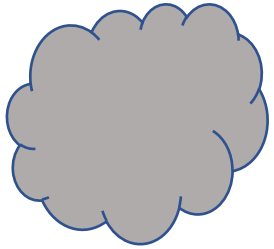


Potential future policy – subject to further consultation and Council approval.

Part 3

How it Started | Where it's Going

Efficiency Focused



LCES criteria

2023 STEP 4 (or 3 w/ LCES)

2019 STEP 3 (or 2 w/ LCES)

STEP 2

GHGI ≤ 6

COP > 2

LCES = Low-Carbon Energy Systems
GHGI = GHG intensity kg/m2/y
COP = Coefficient of Performance

Emissions Focused

LCES criteria

2025 STEP 4 — GHGI ≤ 1

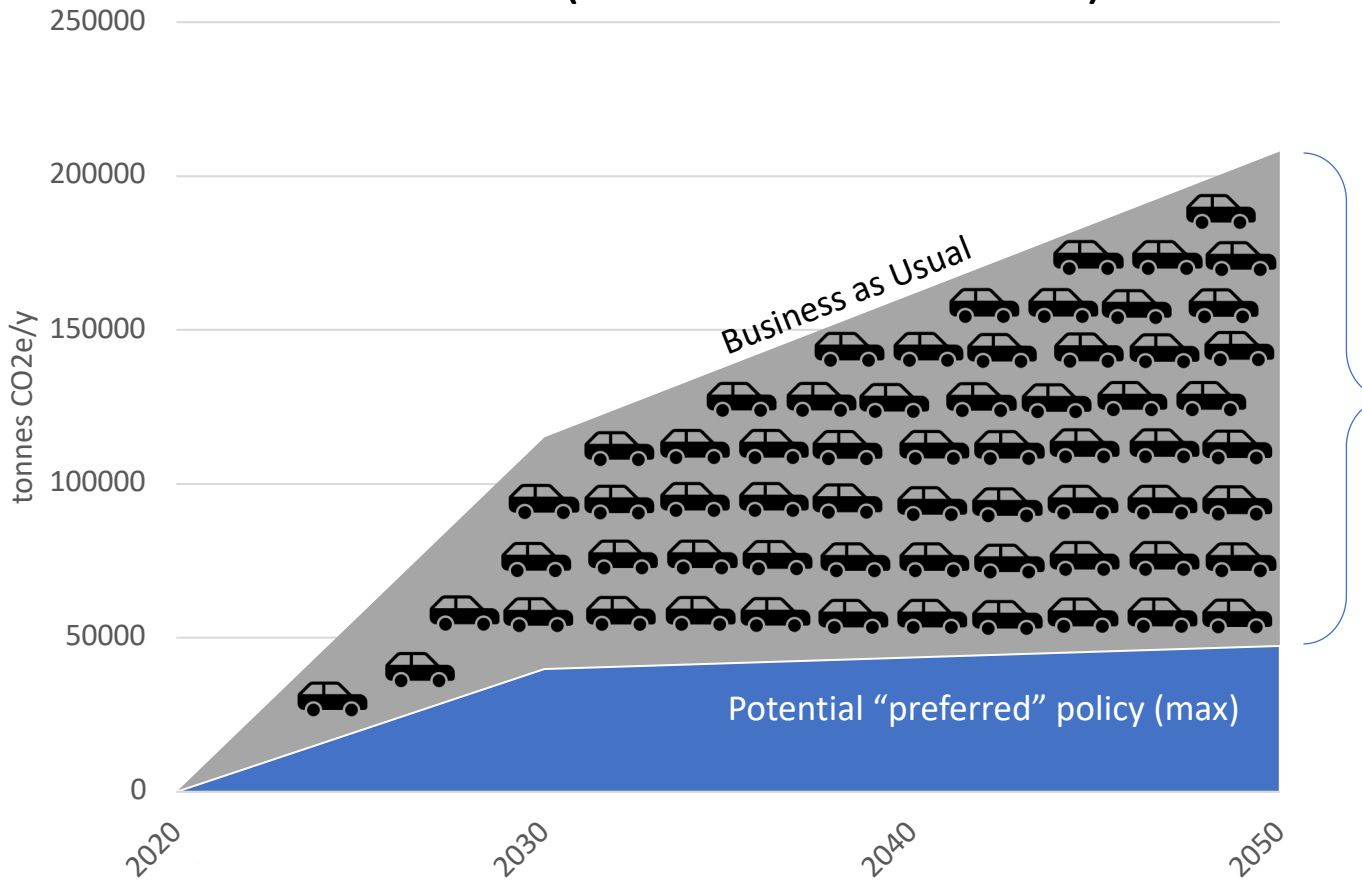
2022 STEP 3 — GHGI ≤ 3

(No COP)

Potential future policy – subject to further consultation and Council approval.

Avoided carbon pollution – preferred policy

At least 2.7M tonnes total avoided carbon pollution
(min. 72% reduction) between now and 2050



*Equivalent to (on average), taking **19,444** cars off the roads every year for 30 years!*

Based on Surrey GHG modelling using GHGI from Step Code Report, and Surrey buildings forecast

We Want to Hear from You!

- Clarification questions?
- Menti quick poll – please click on link in chat.
- Please complete our survey online before Dec. 31st
  - See link posted on website below
- Additional comments/questions can be sent to: stepcode@surrey.ca
- Stay tuned! Sign up for Step Code newsletter at www.surrey.ca/stepcode