



# **CLIMATE EMERGENCY: Summary of Building Emissions Reduction Reports**

**2022 05 17**



Vancouver  
Plan



# Vancouver's carbon pollution



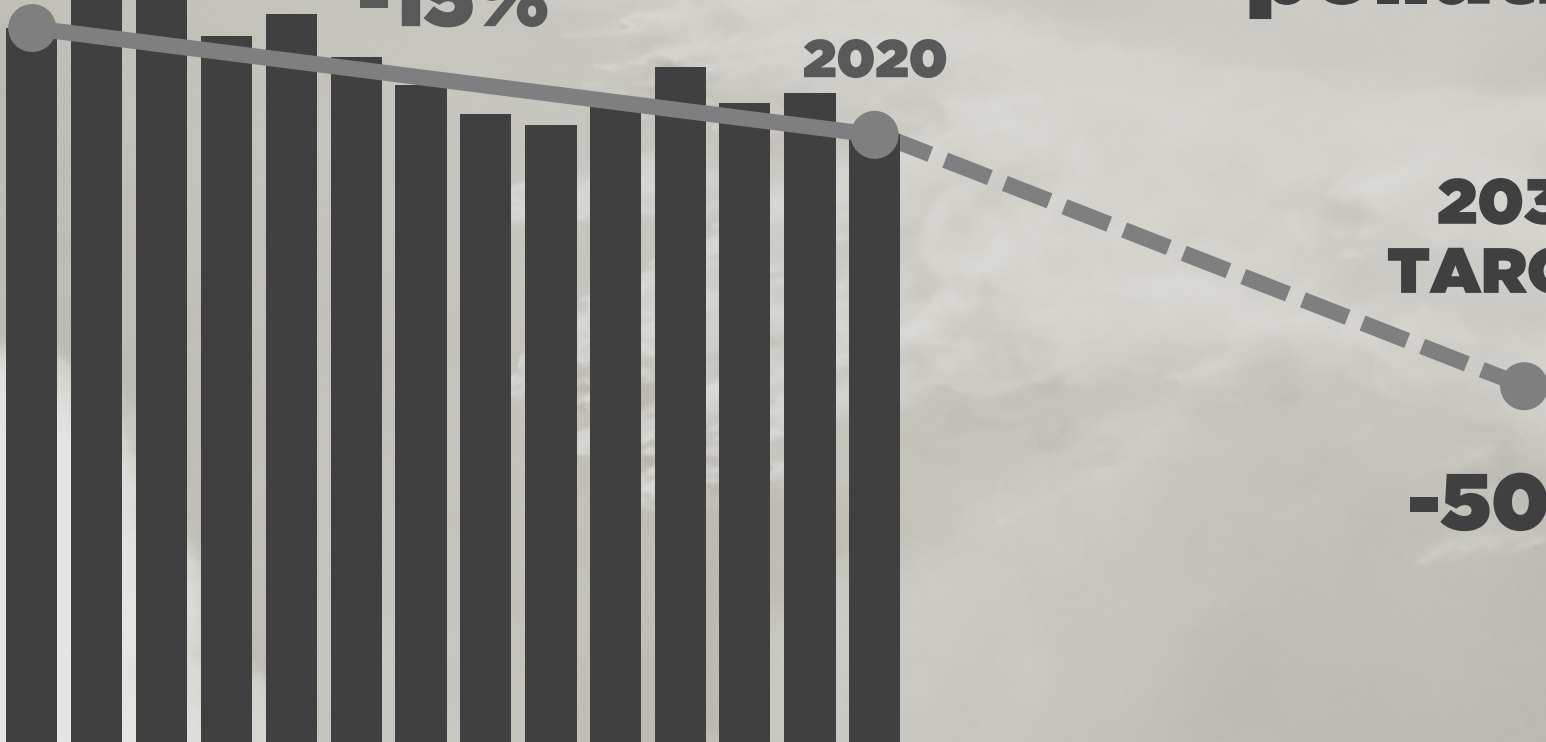
2007

-15%

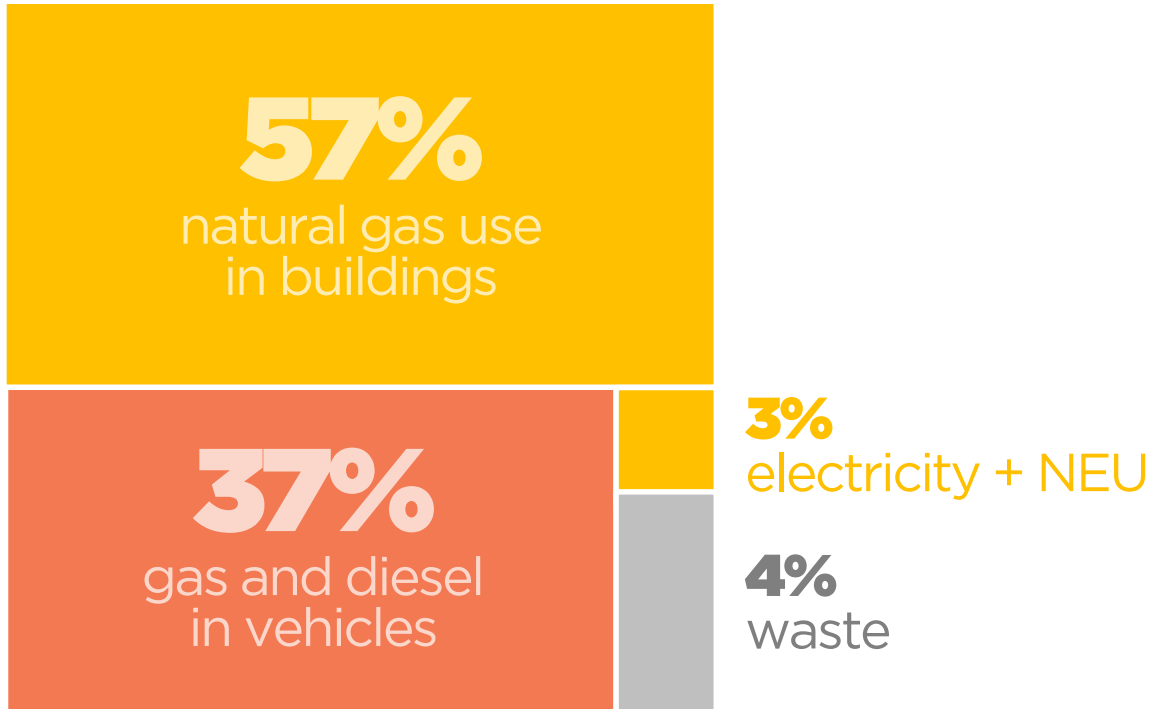
2020

2030  
TARGET

-50%

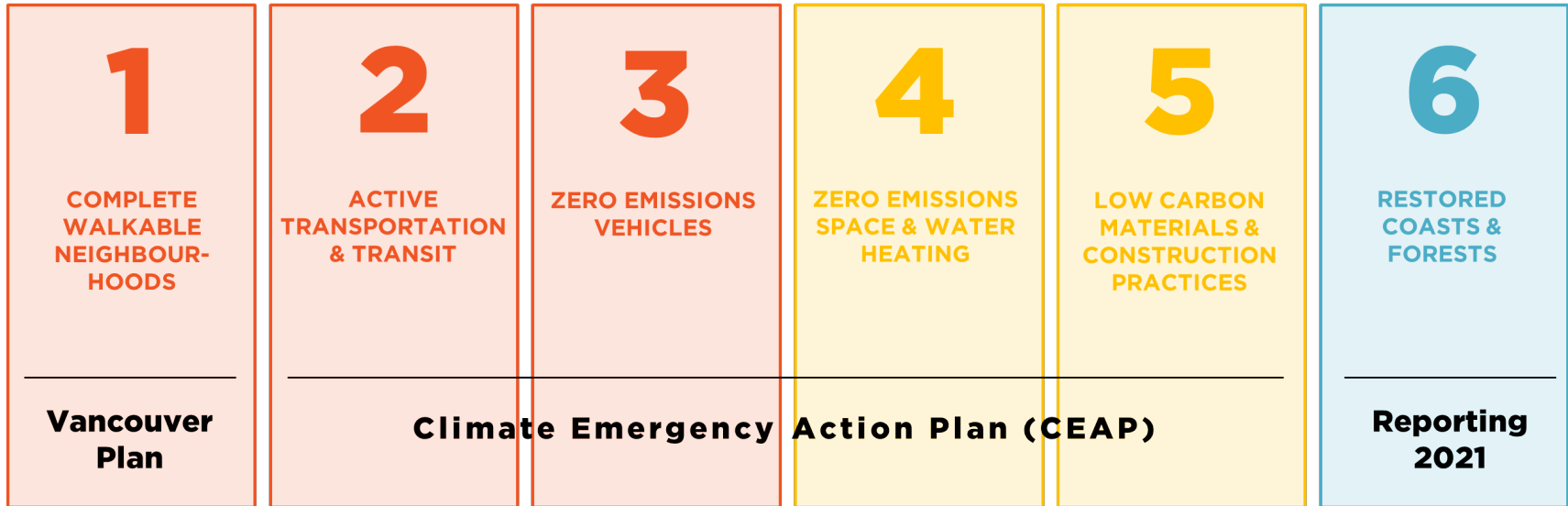


# Vancouver's carbon pollution



*City of Vancouver 2020  
emissions inventory  
(GPC, Scopes 1 and 2)  
Due to rounding, numbers presented  
may not add up to exactly 100%*

# climate emergency 6 big moves



# climate emergency Council decisions 2022

**MAY 17/18/19**

**CE new buildings update**  
(BM4+5)

**Carbon pollution regs**  
Large commercial + multi-family (BM4)

**Carbon pollution regs**  
Detached homes + duplexes (BM4)

**Retrofit grants**  
Non-market housing retrofits (BM4)

**Broadway Plan** (BM1)

**EV charging public hearing**  
Gas stations + parking lots (BM3)

**JUNE 22**

**Vancouver Plan** (BM1)

**JULY 6**

**Capital Plan**  
CEAP Bundle (BM1-6)

**DECEMBER 6**

**CEAP annual report**  
*Information only.* (BM1-6)

**Climate justice charter**  
(BM1-6)

**Mass timber**  
additional code changes (BM5)

**Eco-fees** (BM1-6)

# today's agenda

**Part 1:** New buildings update  
**[BM4+5]**

**Part 2:** Proposed regulatory approach  
for existing large buildings  
**[BM4]**

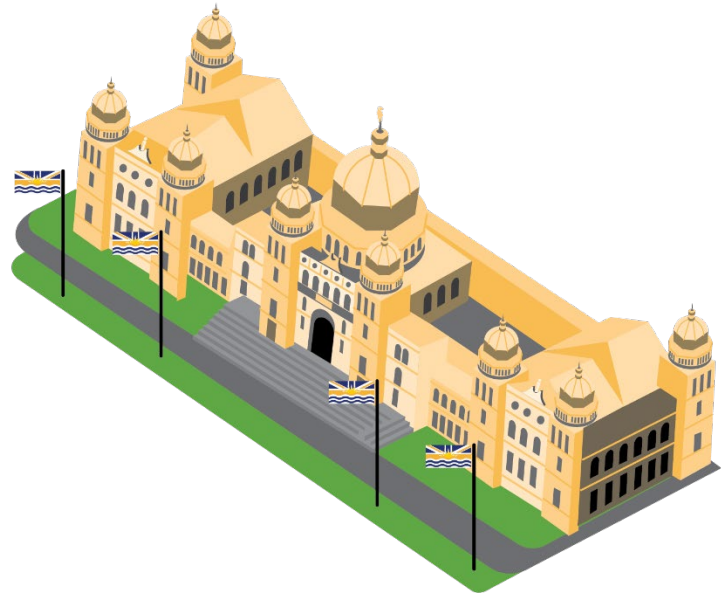
**Part 3:** Proposed regulatory approach  
for existing detached homes  
**[BM4]**

**Part 4:** Grants for non-market  
housing  
**[BM4]**

**Part 5:** Q+A



# provincial alignment



## ALIGNED WITH CLEANBC

CleanBC + CEAP successes are interdependent.

City, province + utilities all have roles which will require continued collaboration + coordination.





# Part 1 new building updates



4

ZERO EMISSIONS  
SPACE AND  
WATER HEATING

**By 2030, the carbon pollution from buildings will be cut in half from 2007 levels.**

Build industry capacity

5

LOW CARBON  
MATERIALS AND  
CONSTRUCTION  
PRACTICES

**By 2030, the embodied carbon from new buildings will be 40% less than 2018 levels.**

Support early owner action

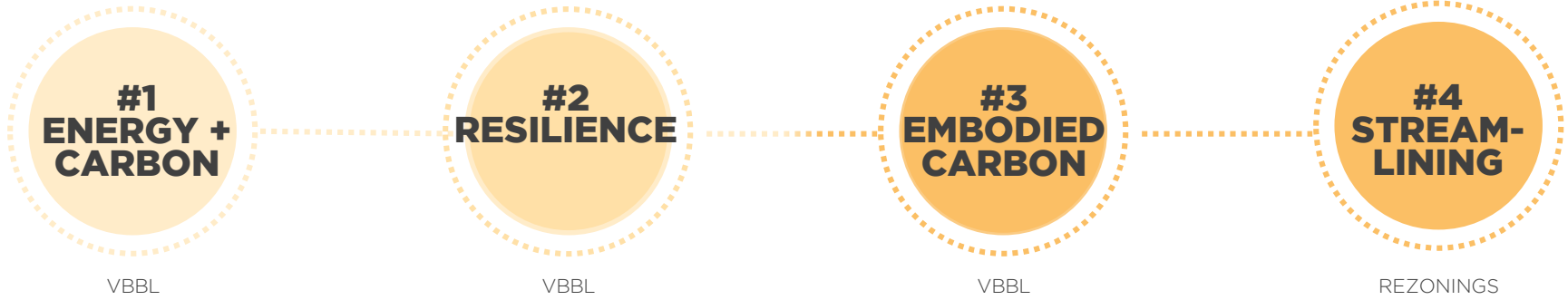
Set carbon pollution limits + streamline regulations

Carbon pollution requirements for new developments

Facilitate access to renewable energy

# staff recommendations

BIG MOVES  
**4+5**  
NEW BUILDINGS



# staff recommendations

BIG MOVES

4+5

NEW BUILDINGS



**2023**

4-6 story residential

**2025**

high rise + commercial  
electrify space heat +  
domestic hot water

# staff recommendations

BIG MOVES

4+5

NEW BUILDINGS

#1  
ENERGY +  
CARBON

VBBL

#2  
RESILIENCE

VBBL

#3  
EMBODIED  
CARBON

VBBL

#4  
STREAM-  
LINING

REZONINGS

**2023**

filtered air  
85% of fine particulate  
matter vehicles + smoke

**2025**

require cooling

# staff recommendations

**BIG MOVES**  
**4+5**  
**NEW BUILDINGS**



**2023**  
reporting only  
**2025**  
10-20% reductions +  
sustainable sourcing

# staff recommendations

**BIG MOVES**  
**4+5**  
**NEW BUILDINGS**



VBBL

VBBL

VBBL

REZONINGS

**IMMEDIATELY**  
remove requirements  
except rainwater (for now)

keep rezoning  
application reviews



# engagement take-aways

BIG MOVES

4+5

NEW BUILDINGS

## NEW BUILDINGS FEEDBACK

### a) generally strong support

for all changes across all groups (including from Vancouver Coastal Health for climate resilience measures)

### b) developers support changes

but note construction costs are rising + new costs may add to overall challenges for affordable rental

### c) more embodied carbon experience needed

large majority are ready/will be ready with support

### d) some concern over gap between current rezoning + future code



# projected impact

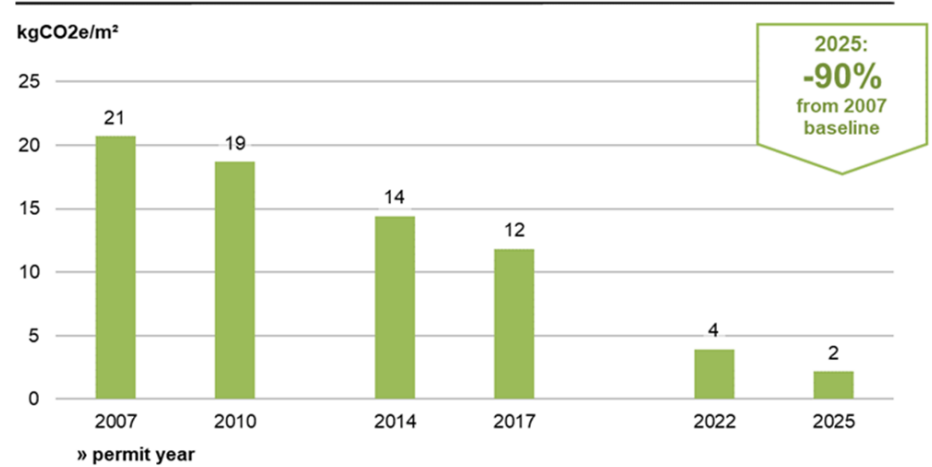
BIG MOVES  
**4+5**  
NEW BUILDINGS

## PROPOSED CHANGES WILL AVOID

**4,600** tonnes CO<sub>2</sub>e/year by 2030  
of **operational carbon pollution**

**18,900** tonnes CO<sub>2</sub>e/year by 2030  
of **embodied carbon**

**Weighted Average GHG Intensity of All New Buildings**



✓ **Near zero emission new construction by 2025**

A nighttime photograph of a city street corner. In the foreground, a traffic light shows a red light. To the left, a brick building with ornate architectural details and a fire escape is visible. To the right, modern glass skyscrapers are illuminated from within, with one prominently displaying the 'HYATT' logo. The street is busy with cars, their lights creating motion blur. The overall scene is a vibrant urban environment at night.

# Part 2 Proposed regulations for existing commercial buildings



4

ZERO EMISSIONS  
SPACE AND  
WATER HEATING

**By 2030, the  
carbon  
pollution from  
buildings will  
be cut in half  
from 2007  
levels.**

Build industry  
capacity

Support early  
owner action

Facilitate access  
to renewable  
energy

Set carbon  
pollution limits  
+ streamline  
regulations

Carbon pollution  
requirements for  
new developments

# large commercial + multi-family



## Detached Homes + Duplexes

78,800 homes

28% of total GHG's



## Multi-Family Residential\*

6,115 buildings

24% of total GHG's

\*incl. rental, non-market, condos



## Commercial

3,420 buildings

26% of total GHG's



## Industrial

1,081 buildings

20% total GHG's

# staff recommendations





# staff recommendations



**2024**  
**COMMERCIAL**  
>100K ft<sup>2</sup>  
250 buildings

**2025**  
**COMMERCIAL**  
>50K ft<sup>2</sup>  
**MULTI-FAMILY**  
>100K ft<sup>2</sup>  
800 buildings

**2026**  
**MULTI-FAMILY**  
>50K ft<sup>2</sup>  
450 buildings

# staff recommendations



**OFFICE + RETAIL**  
>100K ft<sup>2</sup>

**2026 limits**  
~45 buildings

**2040 limits**  
~175 buildings

# staff recommendations



**ALL BUILDINGS**  
except 1+2 family homes

**2023**  
repeal existing building  
energy upgrade requirements  
VBBL part 11

# staff recommendations



**2024**  
recommendations  
to Council to achieve 2030 target

**COMMERCIAL REGs**  
limits for smaller + more commercial types  
prescriptive requirements, including rooftop units

**MULTI-FAMILY REGs**  
2030 limits + prescriptive requirements

# staff recommendations



## MULTI-FAMILY

- early reporting incentive
- pilot cooling/heat pump program

## COMMERCIAL

- tune-up program
- 2040 retrofit planning + concierge service

# engagement take-aways



## LARGE BUILDINGS FEEDBACK

### a) commercial regulations reasonable

provided no disclosure + multi-family supports

- 2026 GHGi initial limit reasonable
- 2040 heat energy limits: challenging but consistent with best practice, supports critical to success
- technical advisory committee critical for roadmap regulation details

### b) multi-family stakeholders supportive

robust programming required

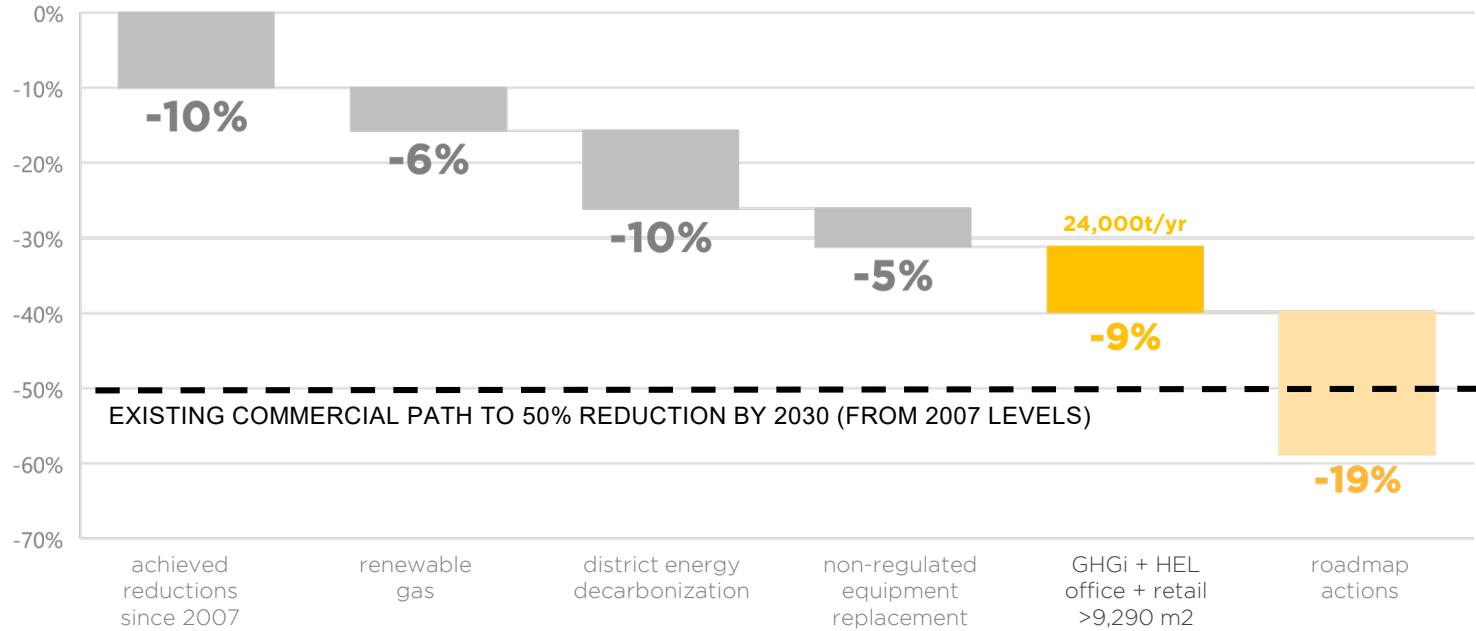
### c) calls for greater + faster action

broad appetite + support for existing building carbon limits

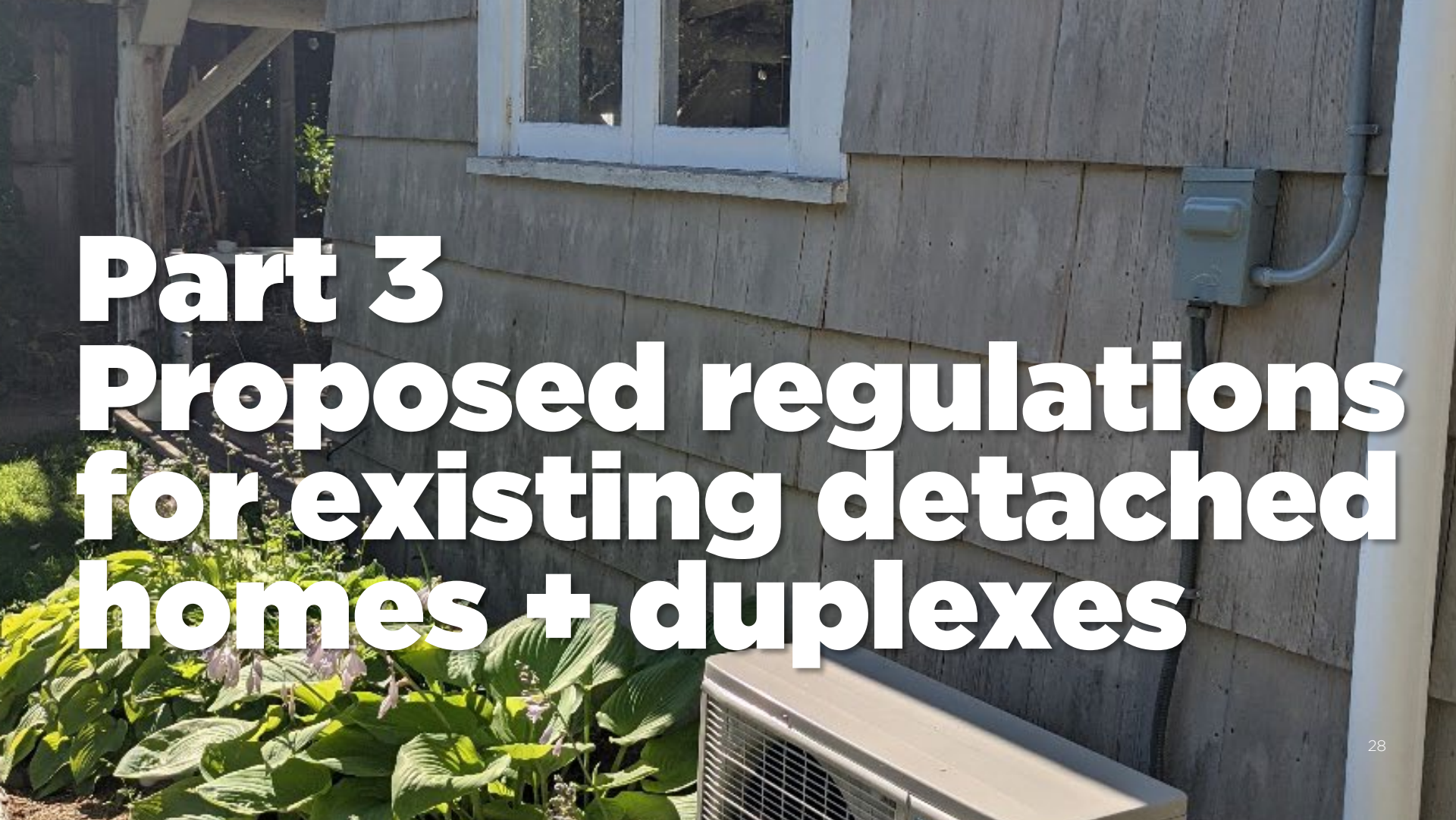




# projected impact (commercial only)



<b>ONGOING EMISSIONS REDUCTION MECHANISMS</b>	<b>PROPOSED ACTIONS</b>	<b>POTENTIAL 2024 ACTIONS (UNCOMMITTED)</b>
---------------------------------------------------	-----------------------------	-----------------------------------------------------

A photograph of a wooden house exterior. The house has horizontal wooden siding and a white window frame. To the right of the window, there is a grey utility box with a pipe running vertically down the wall. In the foreground, there are green hosta plants with purple flowers. The text is overlaid on the left side of the image.

**Part 3**  
**Proposed regulations**  
**for existing detached**  
**homes + duplexes**

4

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+ streamline  
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Carbon pollution  
requirements for  
new developments

# detached homes + duplexes



## Detached Homes + Duplexes

78,800 homes

28% of total GHG's

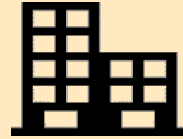


## Multi-Family Residential\*

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## Commercial

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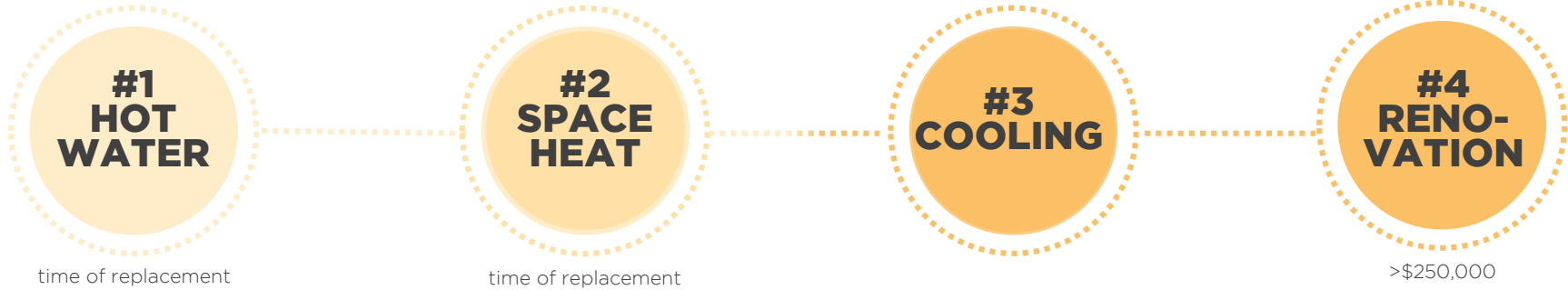
## Industrial

1,081 buildings

20% total GHG's



# proposed recommendations at time of engagement



# staff recommendations

BIG MOVE  
**4**  
DETACHED HOMES

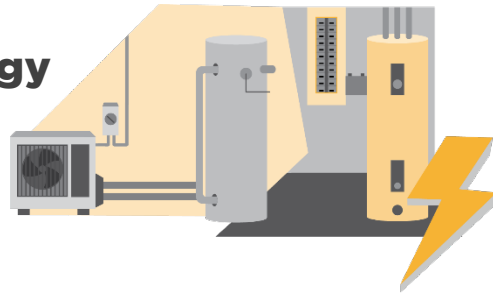


time of replacement

time of replacement

>\$250,000

**Coming in 2023  
(DELAYED)  
renewable energy  
hot water**



# staff recommendations



time of replacement

time of replacement

>\$250,000

**Coming in 2023  
(DELAYED)  
renewable energy  
space heating**



# staff recommendations



**Jan 1, 2023:**  
all permitted  
A/C units must  
be heat pumps





# staff recommendations



**Jan 1, 2023:**  
**large renovations must install electric heating + hot water**

# engagement take-aways



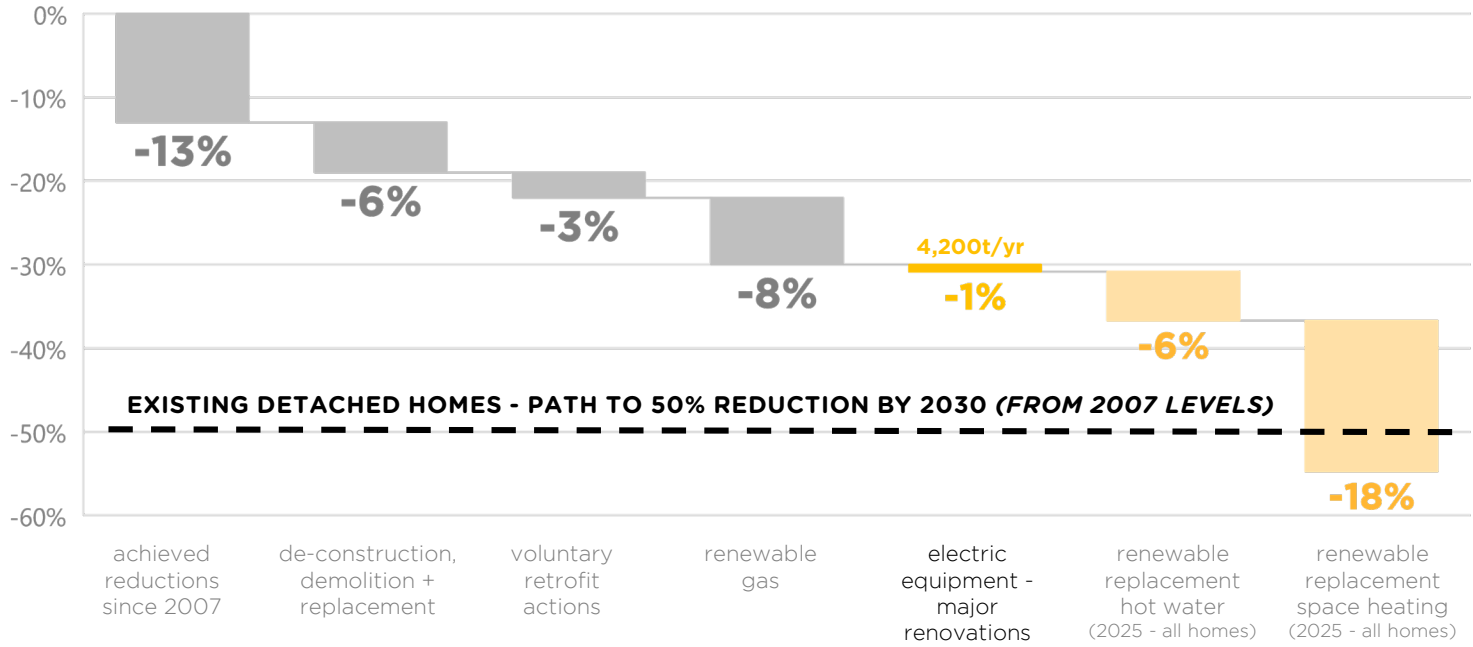
## DETACHED HOMES FEEDBACK (A/C + RENOVATIONS)

- a) **2/3 indicate approach seems “about right” or “doesn’t go far enough”**
  
- b) **majority of owners + renters were supportive**  
renters were more likely to feel policies “didn’t go far enough”
  
- c) **observed major themes**  
**need for continued incentives (i.e. \$12,000 for heat pumps) + owner retrofit coaching**



# projected impact

BIG MOVE  
4  
DETACHED HOMES



**ONGOING EMISSIONS REDUCTION MECHANISMS**

**PROPOSED ACTIONS**

**POTENTIAL 2023 ACTIONS (UNCOMMITTED)**



# Part 4 retrofit grant for non-market housing

Photo credit: housinggef.org

# staff recommendations



## \$2M RESILIENT NON-MARKET HOUSING RETROFIT PROGRAM GRANT

- identify opportunities + augment Provincial incentives
- support retrofit implementation + operations capacity building
- climate justice + resilience (via cooling)
- inform future improvements to Provincial program



GRANT FUNDED IN 2019-2022 DEEP BUILDING RETROFIT CAPITAL PROGRAM

# four reports summary

- >50,000t/year GHG reduction ~ 13,000 fewer cars
- resilience: cooling + air filtration
- first building embodied carbon regulations in North America
- first existing building carbon regulations in Canada
- market readiness: proposed 2030 CleanBC equipment standards
- enable proposed Metro Vancouver carbon pollution limits







# Part 5

# Q+A