

# OUR BACKYARD GHGs: WHAT EMISSION SOURCES IN OUR REGION CONTRIBUTE TO CLIMATE CHANGE?



## INQUIRY SPARK ACTIVITY

### INTRODUCTION

Climate change is both a global and a local challenge, and it is already affecting our planet and our region in profound ways, making our summers hotter and drier, our winters warmer and wetter, and increasing the occurrence of extreme weather events. Climate change is caused by the increase in concentrations of greenhouse gases (GHGs) in the atmosphere. These increases are primarily due to human activities, and largely from burning fossil fuels.

Every five years, Metro Vancouver compiles an “emissions inventory” to calculate GHGs from various sources in our region. This activity explores those major sources. It supports, informs and inspires climate friendly conversations and choices.

### ACTIVITY

#### WHAT ACTIVITIES IN METRO VANCOUVER GENERATE GHGs?

1. Consider these GHG sources, and answer the questions below:

- a. Heavy-Duty Vehicles
- b. Agriculture
- c. Industry
- d. Cars and Trucks
- e. Air, Marine, Rail
- f. Non-Road Engines
- g. Waste
- h. Buildings

- How is your life connected directly and indirectly to these GHG sources?
- How do Metro Vancouver residents contribute to GHGs emitted outside of our region? Identify and discuss some examples.

2. View the GHG Source Cards (on p. 2). In small groups, discuss and arrange the cards in order from largest to smallest GHG sources.

- Which activities are the largest contributors of GHGs? Why do you think so?
- Which activities are the smallest contributors? Why do you think so?

3. When ready, review the Regional Sources of Greenhouse Gas Emissions Answer Key (on p. 3) and compare with your answers. How did you do? Consider the following questions:

- Which GHG sources did you get correct?
- Which GHG sources surprised you? Were they bigger or smaller than you expected?
- What observations do you have?
- What new questions do you have?

4. View the Carbon Neutral by 2050 graphic (pg. 4) and consider the challenge and changes required to achieve carbon neutrality. Reflect on the top three GHG sources (Cars & Trucks, Buildings, and Industry) and discuss these questions:

- What ideas do you have for individuals to reduce their GHG emissions?
- How is your school, community or household making climate friendly choices?

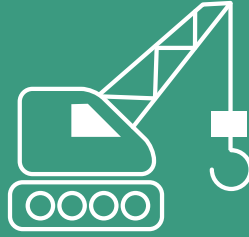
#### EXTENSION QUESTIONS

- What solutions are you aware of to reduce GHGs in your neighborhood and/or region?
- Why do you think it's so challenging to reduce GHGs and tackle climate change?
- How would you teach someone about the connections between our lives and GHGs?

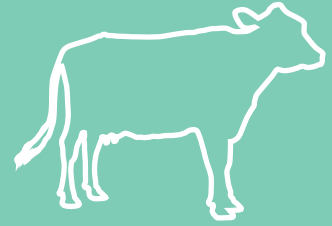


# GHG SOURCE CARDS

Print and cut out sets of GHG Source Cards and the % Cards. Challenge students to match the GHG Source with the correct percentage of total emissions.



NON-ROAD ENGINES



AGRICULTURE



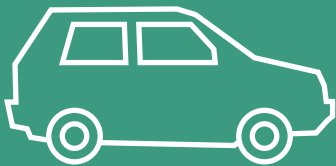
WASTE



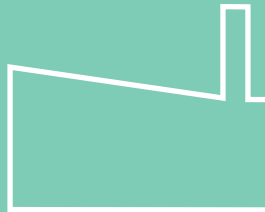
HEAVY DUTY VEHICLES



AIR, MARINE, RAIL



CARS AND TRUCKS



INDUSTRY



BUILDINGS



30%

14%

8%

2%

28%

13%

4%

1%

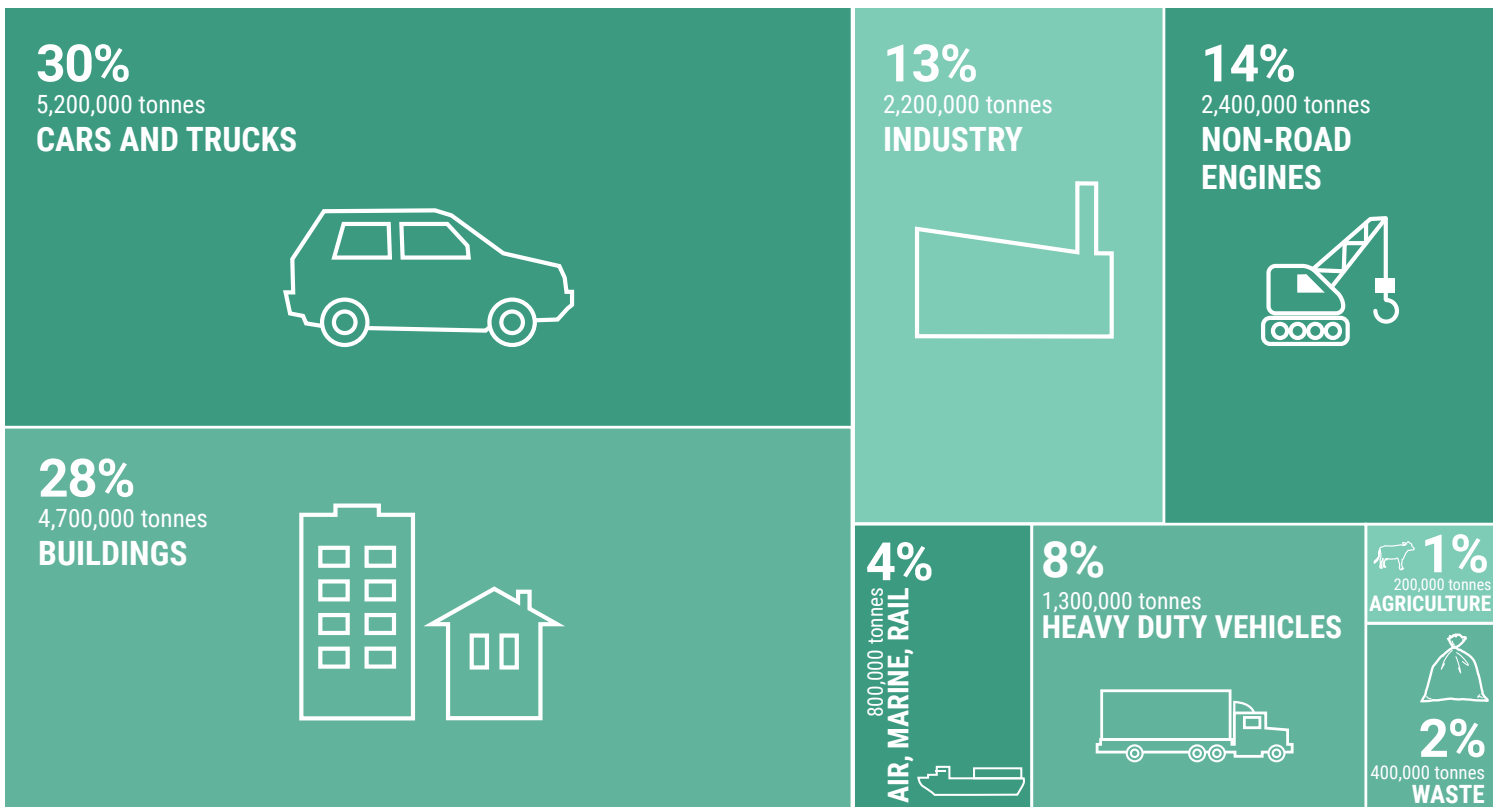
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## ANSWER KEY

### REGIONAL SOURCES OF GREENHOUSE GAS EMISSIONS



Source: Metro Vancouver 2023



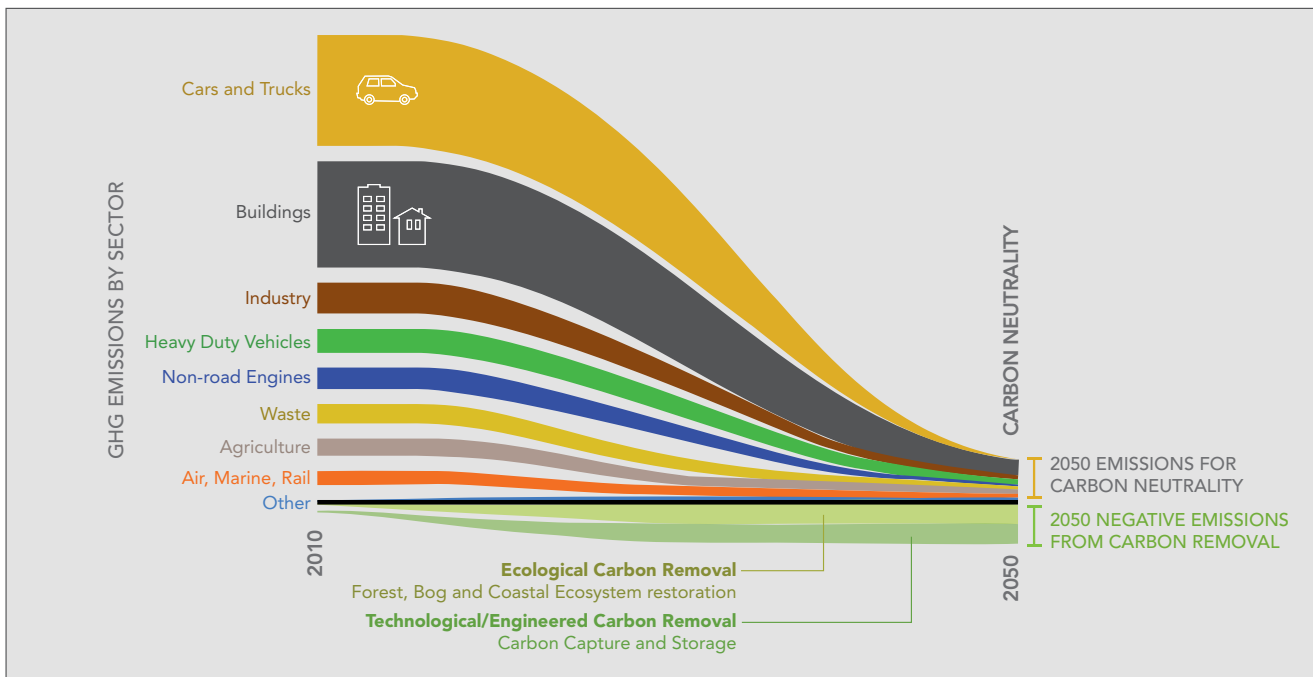
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## CARBON NEUTRAL BY 2050

Getting to carbon neutral by 2050 requires GHG reductions from all sources, with many becoming “zero emissions”. This graphic illustrates how a carbon neutral region can be achieved by a combination of GHG reductions and some carbon removal.



Source: Metro Vancouver 2018

## LEARN MORE!

To learn more about climate change, climate action and climate strategy in Metro Vancouver visit:

- [Metro Vancouver Air Quality & Climate Action](#)
- [Metro Vancouver Climate 2050](#)
- [Metro Vancouver Climate Literacy](#)



Find tools to support teaching, learning, and leadership about local sustainability priorities at [metrovancover.org/school-programs](http://metrovancover.org/school-programs)



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SERVICES AND SOLUTIONS FOR A LIVABLE REGION