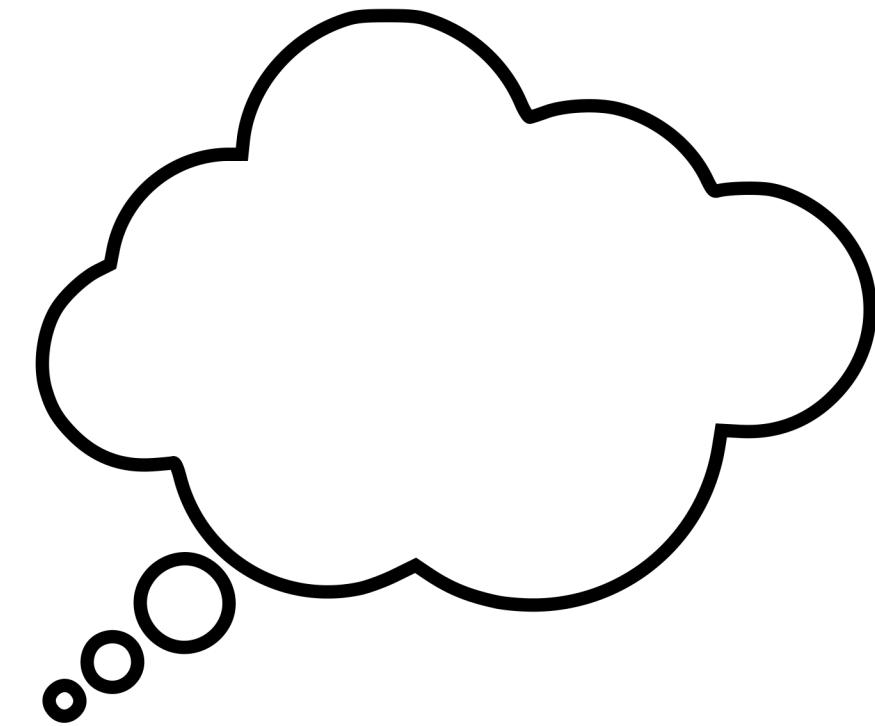


13 CLIMATE ACTION



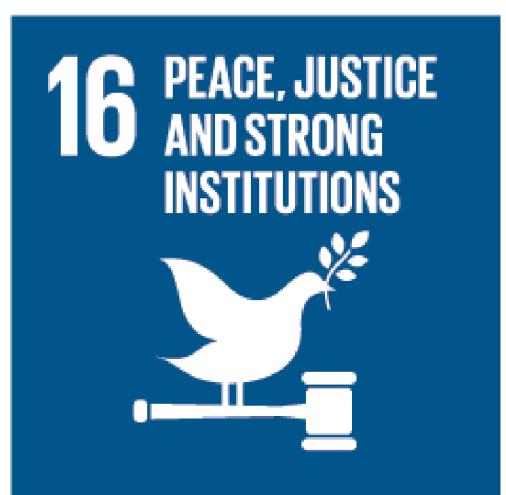
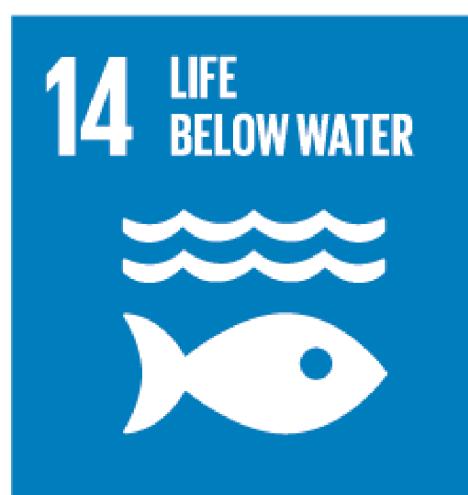
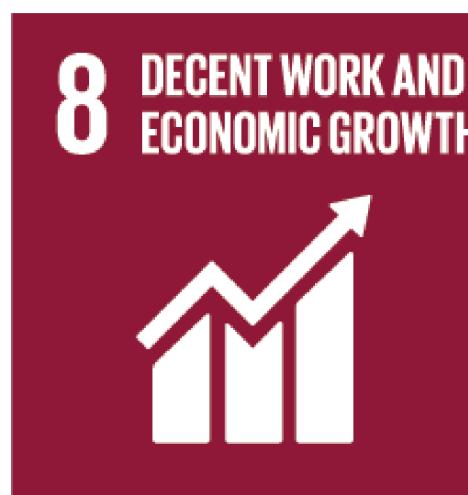
THE GLOBAL GOALS
For Sustainable Development

What are they?

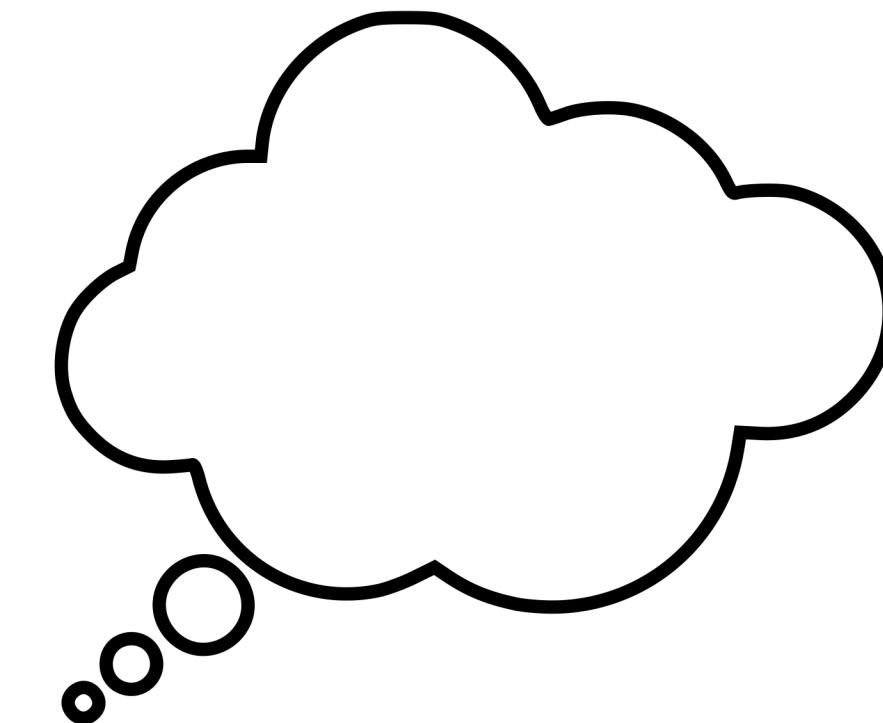




SUSTAINABLE DEVELOPMENT GOALS



What is the Goal 13?





13 CLIMATE ACTION

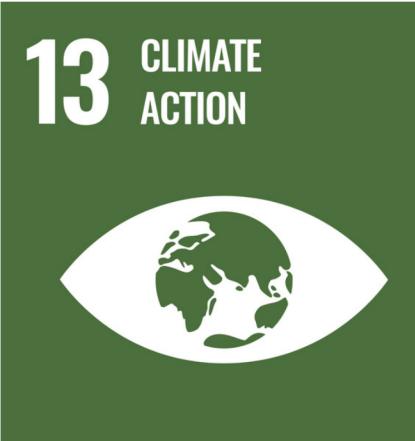


ACT NOW
TO STOP GLOBAL
WARMING.

Global emissions
of carbon dioxide (CO₂)
have increased by
almost 50% since 1990.



SUSTAINABLE
DEVELOPMENT GOALS



Why Goal 13?





TAKE URGENT ACTION TO COMBAT CLIMATE CHANGE AND ITS IMPACTS



SUSTAINABLE DEVELOPMENT

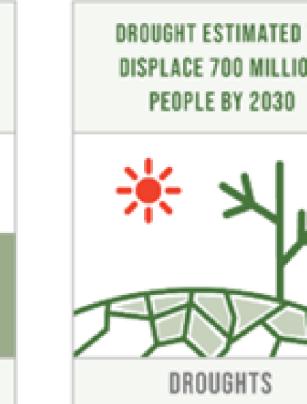
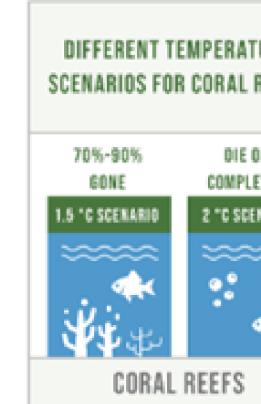
GOALS



CLIMATE CHANGE

IS HUMANITY'S "CODE RED" WARNING

OUR WINDOW TO AVOID CLIMATE CATASTROPHE IS CLOSING RAPIDLY



ENERGY-RELATED CO₂ EMISSIONS INCREASED 6% IN 2021 REACHING HIGHEST LEVEL EVER

CLIMATE FINANCE FALLS SHORT OF \$100 BILLION YEARLY COMMITMENT DEVELOPED COUNTRIES PROVIDED \$79.6 BILLION IN CLIMATE FINANCE IN 2019

RISING GLOBAL TEMPERATURES CONTINUE UNABATED, LEADING TO MORE EXTREME WEATHER



Canadians want government action on severe weather

Severe weather
events are affecting
Canadians now.

personally/friends & family affected



Canadians say government should:



take active role in preventing severe weather disasters
provide relief measures to affected Canadians
have national program to prevent and manage severe weather
help protect homes from severe weather

3 in 4 Canadians
are concerned
about the short
term impacts of
climate change.



Canadians believe
we all play a role in
reducing impacts of
climate change.

Who is responsible?



GOVERNMENT



PRIVATE INDUSTRY



INDIVIDUAL CANADIANS

For more information: climateproof.ca

National Omnibus of 1,511 Adult Canadians, June 17, 2021, Angus Reid Group

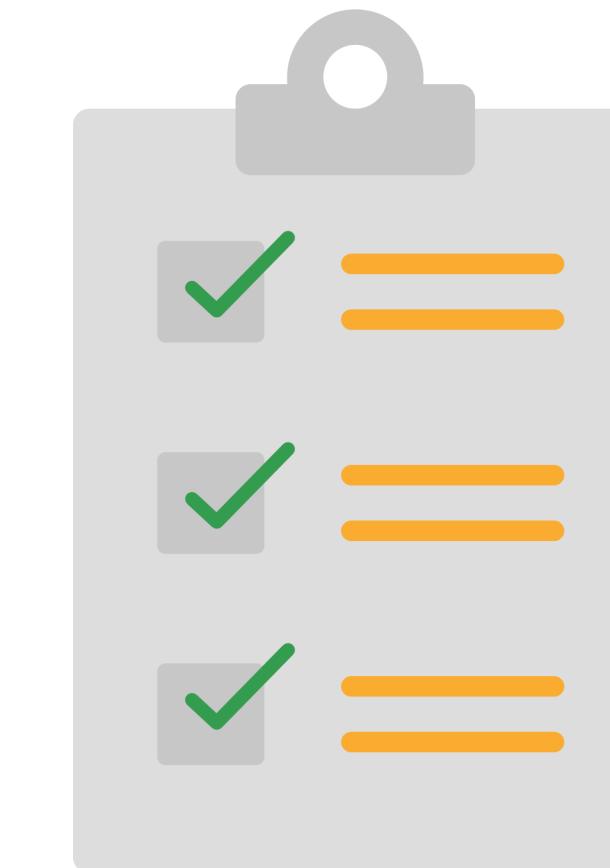


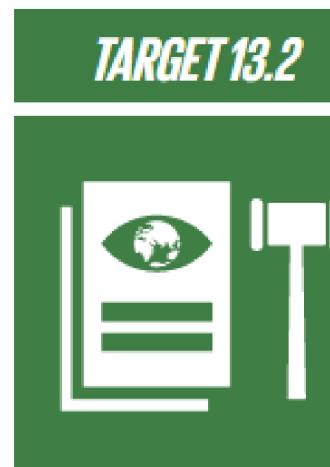
SUSTAINABLE
DEVELOPMENT GOALS

CLIMATE PROOF
CANADA



Targets and Indicators



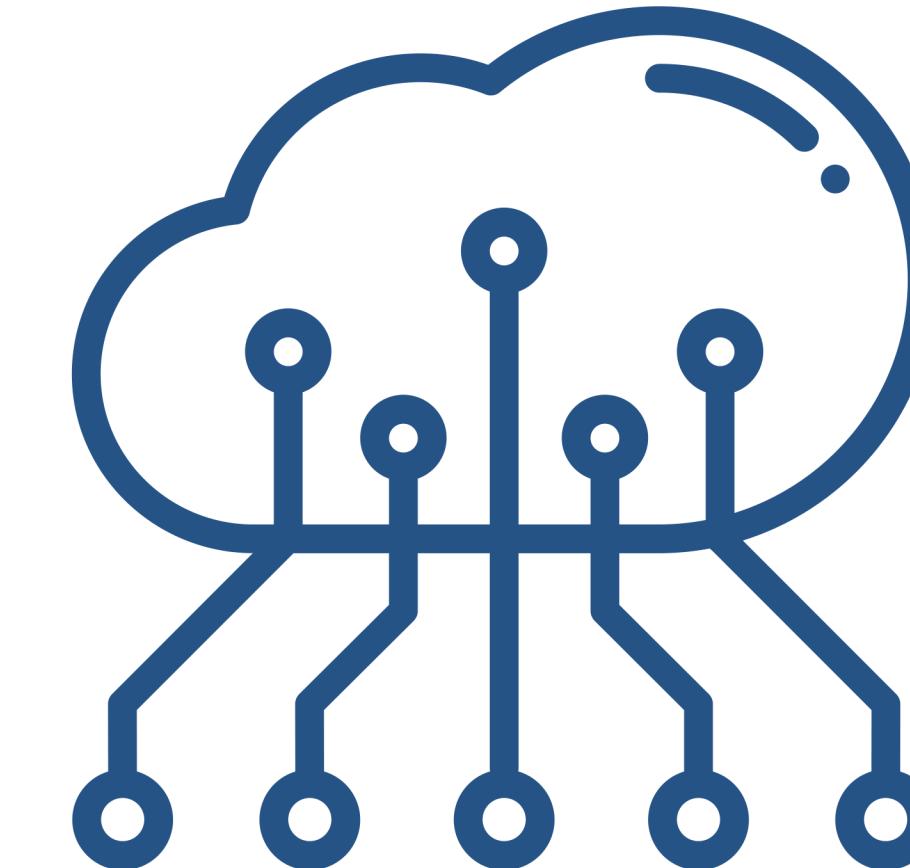


Target 13.2 - Integrate climate change measures into national policies, strategies and planning

Indicator 13.2.2 - Total greenhouse gas emissions per year



Data Sources





Data Sources

<https://unstats.un.org/sdgs/UNSDGAPIV5/swagger/index.html>

<https://data.ec.gc.ca/data/substances/monitor/canada-s-official-greenhouse-gas-inventory/B-Economic-Sector/?lang=en>

<https://www.kaggle.com/datasets/sarahquesnelle/canada-data>



Data Exploration



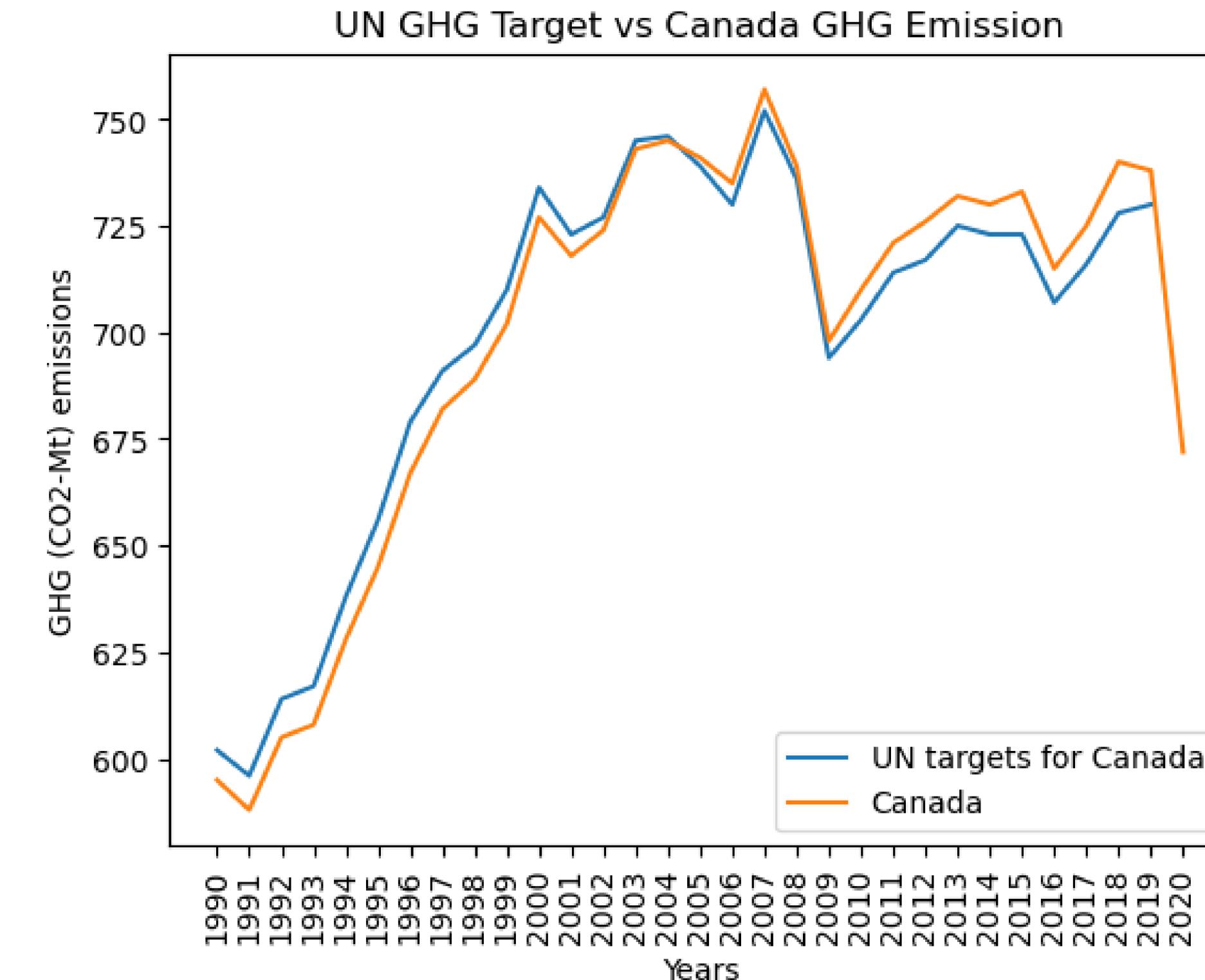


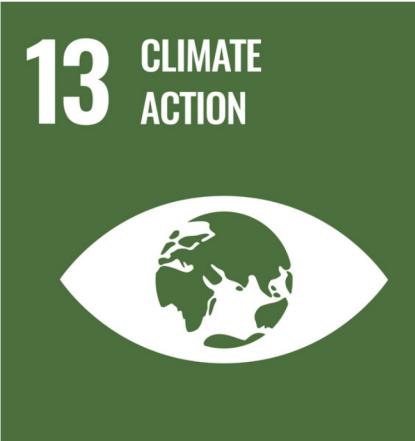
Canada vs UN Targets



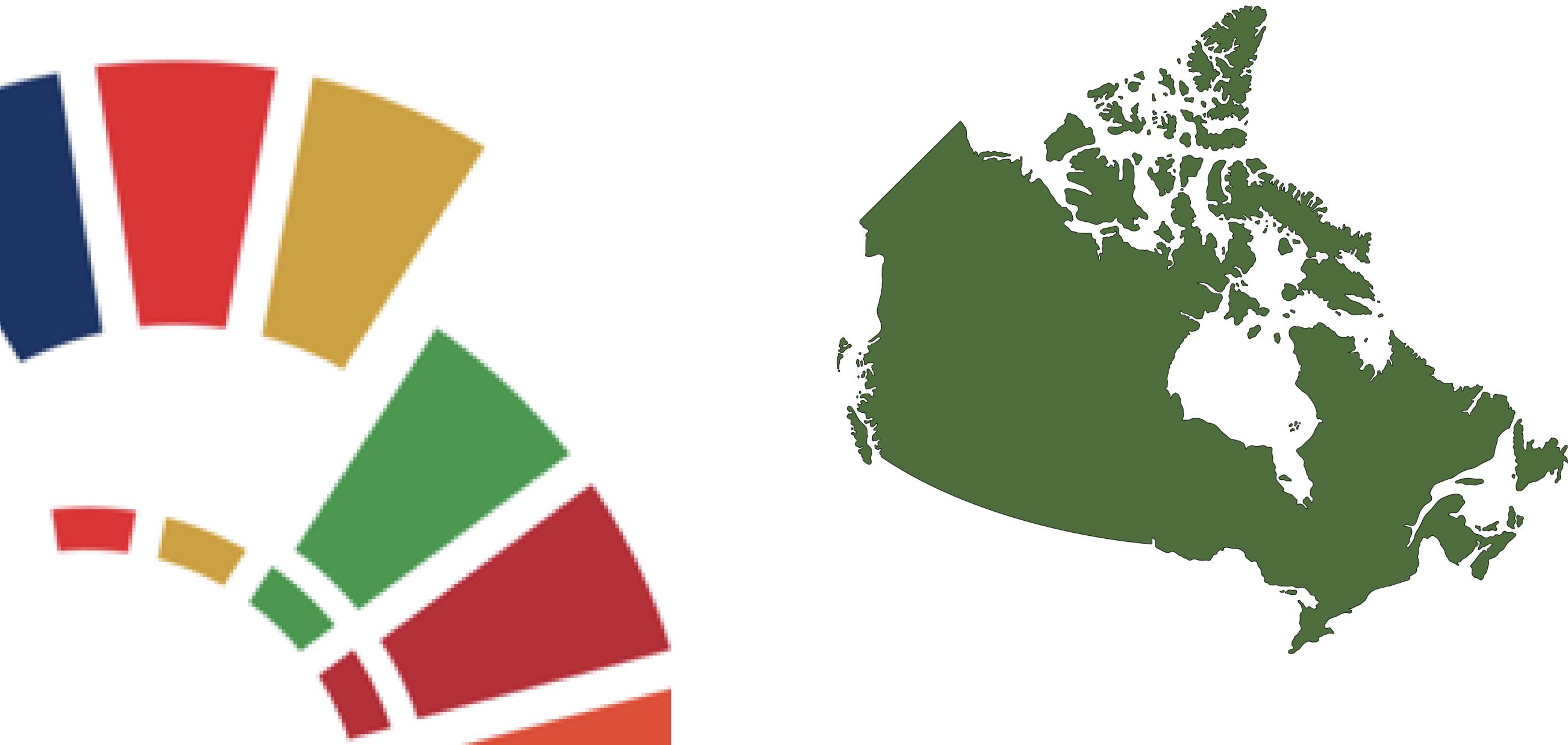


UN targets for Canada vs actuals Canada emissions of CO2 eq by year



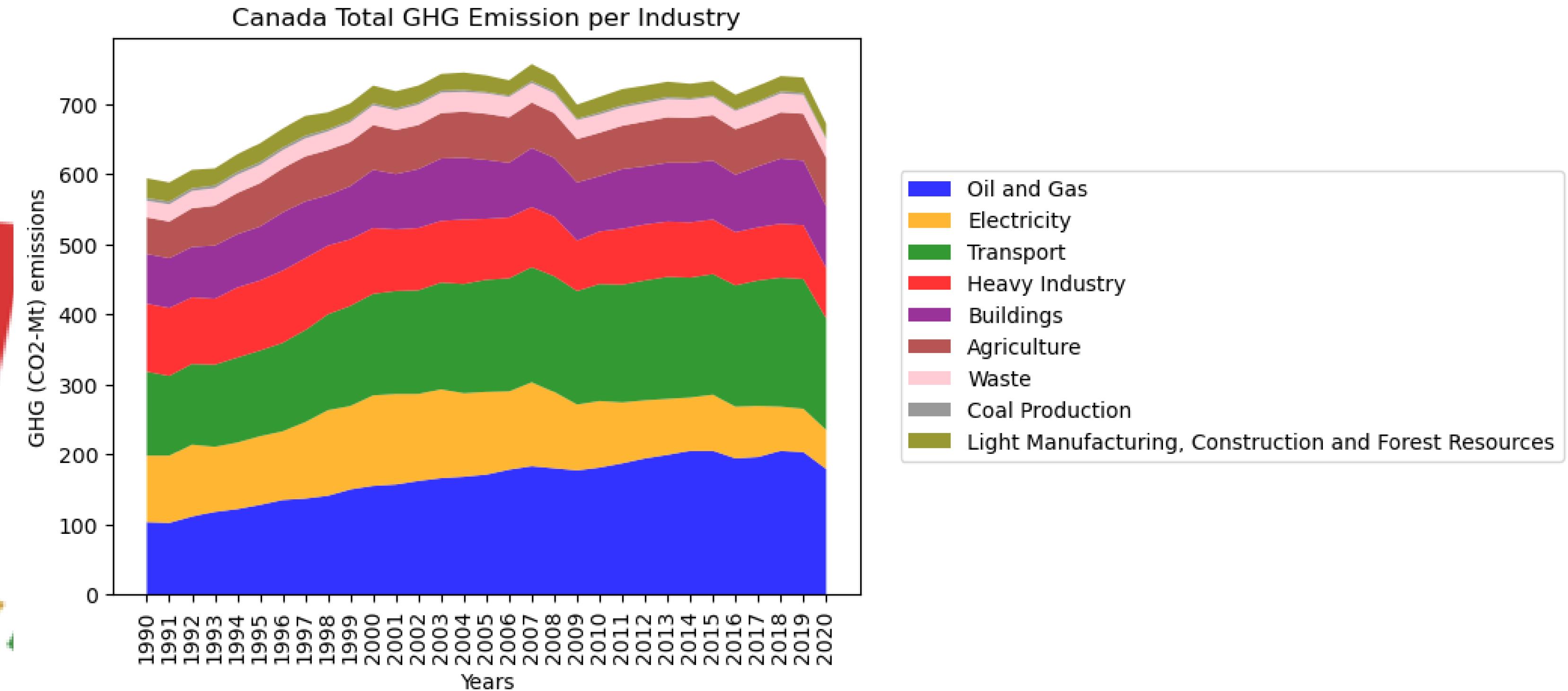


Canada Emissions





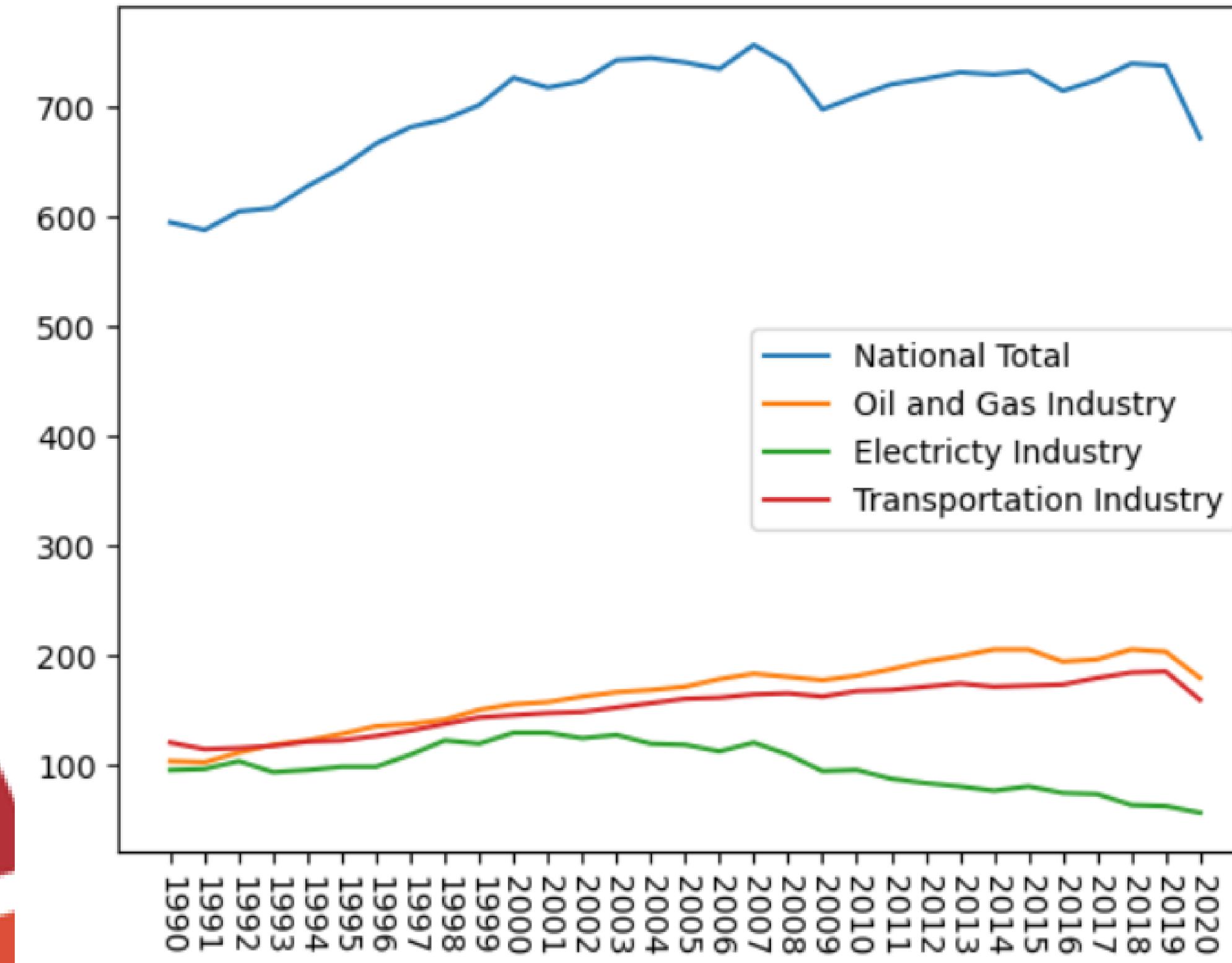
Canada Emissions per Industry





3 Industries of Focus

Canada GHG Emissions





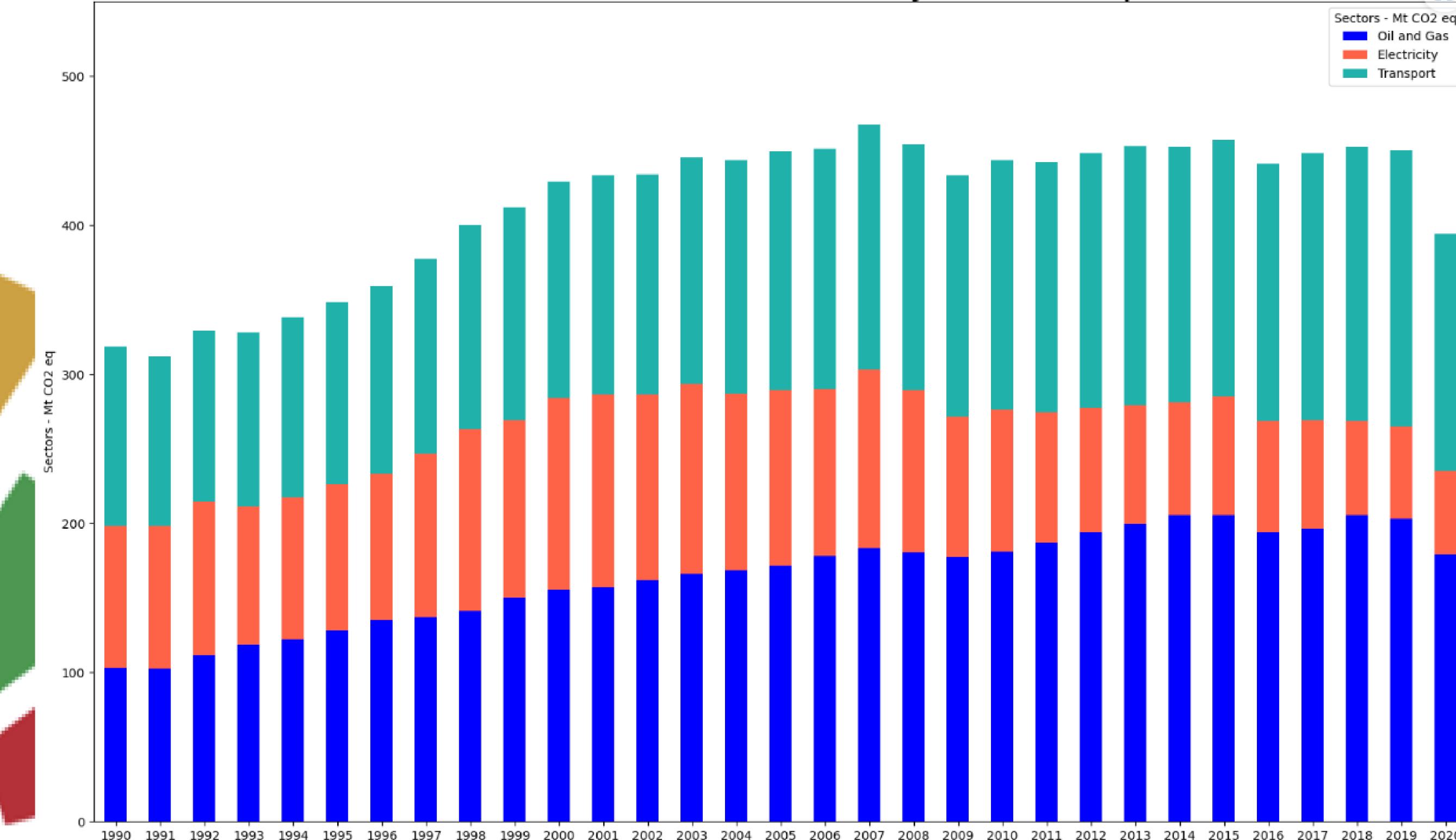
3 Industries of Focus

GHG Emissions for Oil and Gas, Electricity and Transport Industries



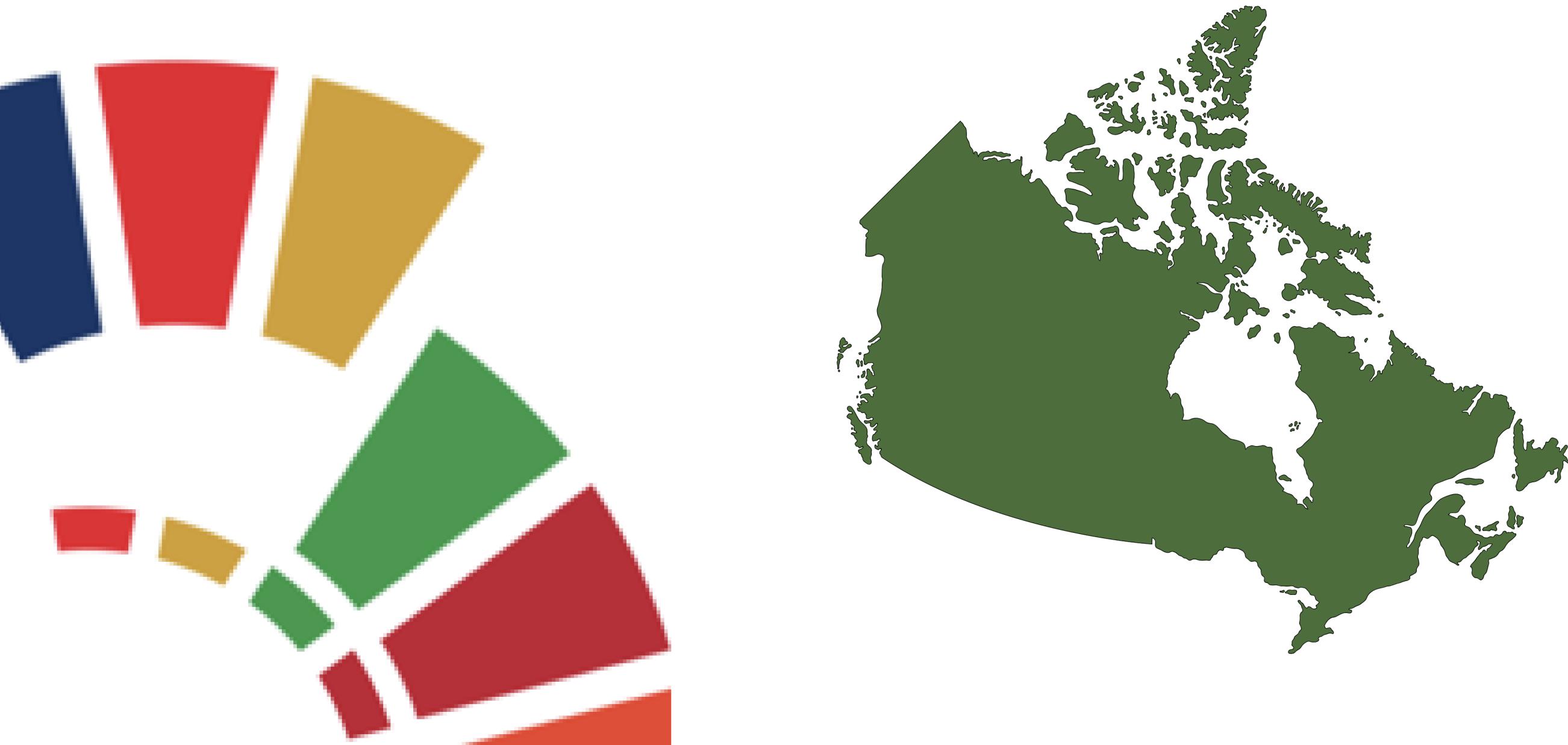
Sectors - Mt CO₂ eq

- Oil and Gas
- Electricity
- Transport





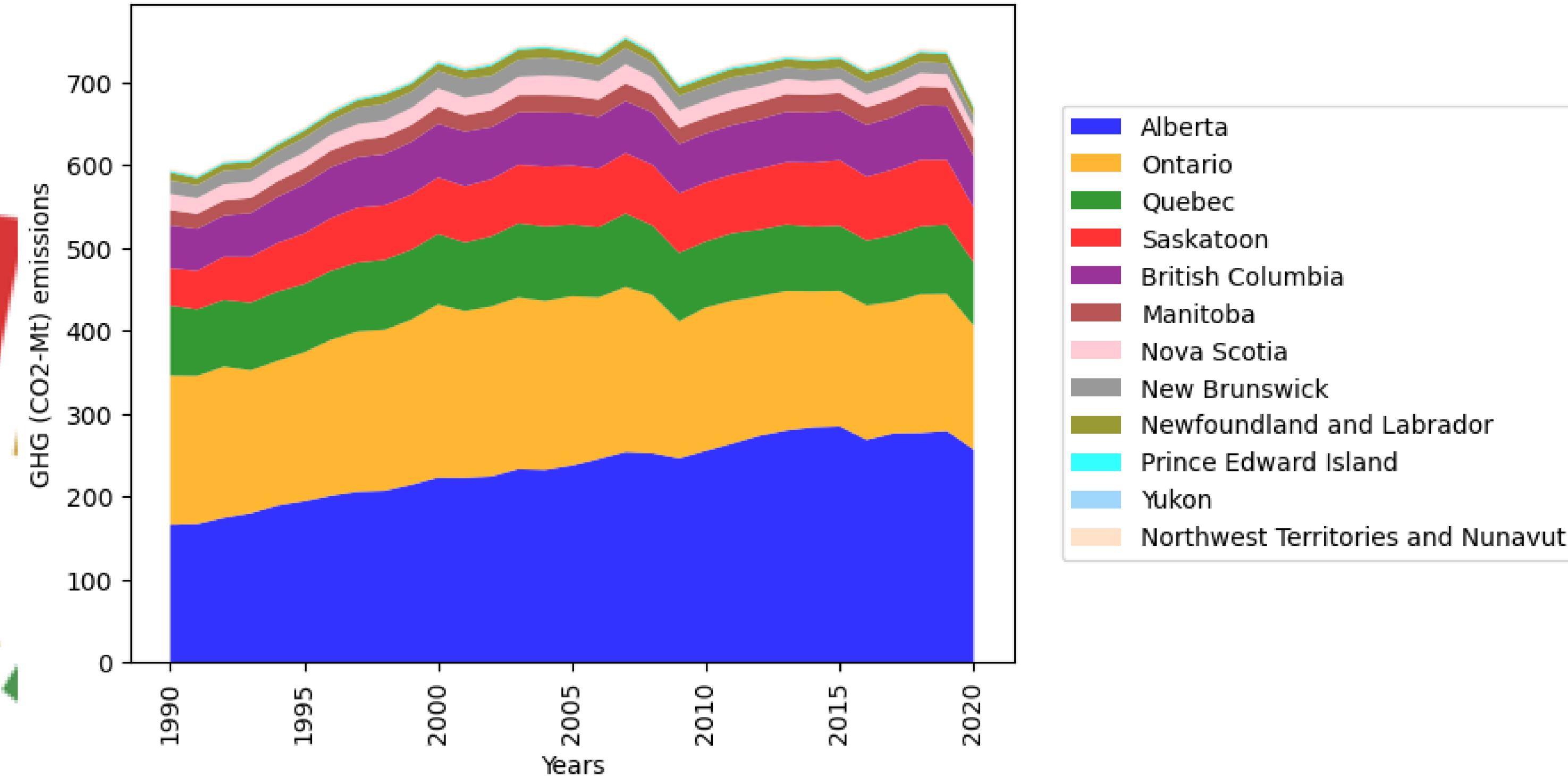
Province Emissions





Canada emissions per Province and Territory

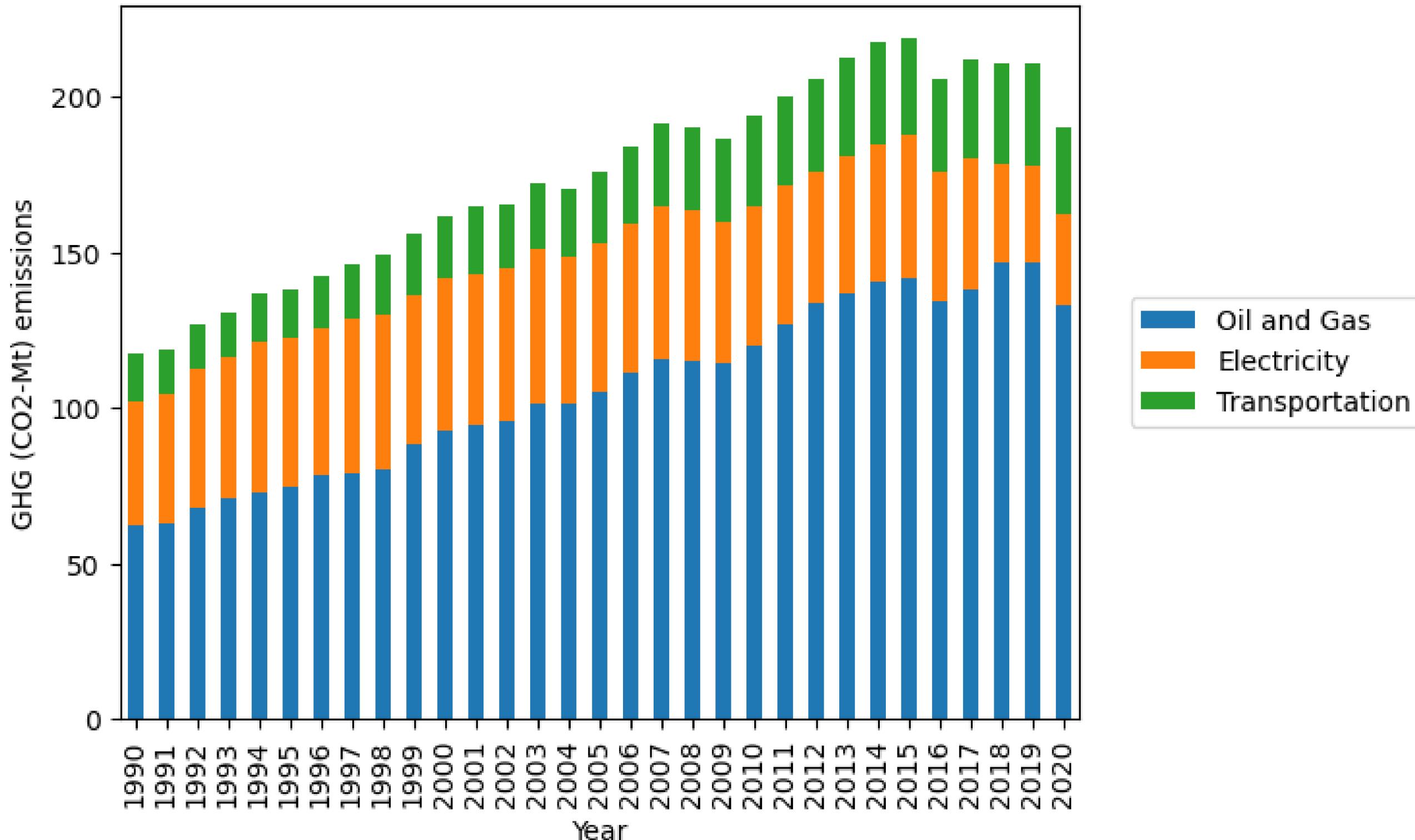
Canada GHG Emissions for each Province and Territory





Alberta emissions per Industry

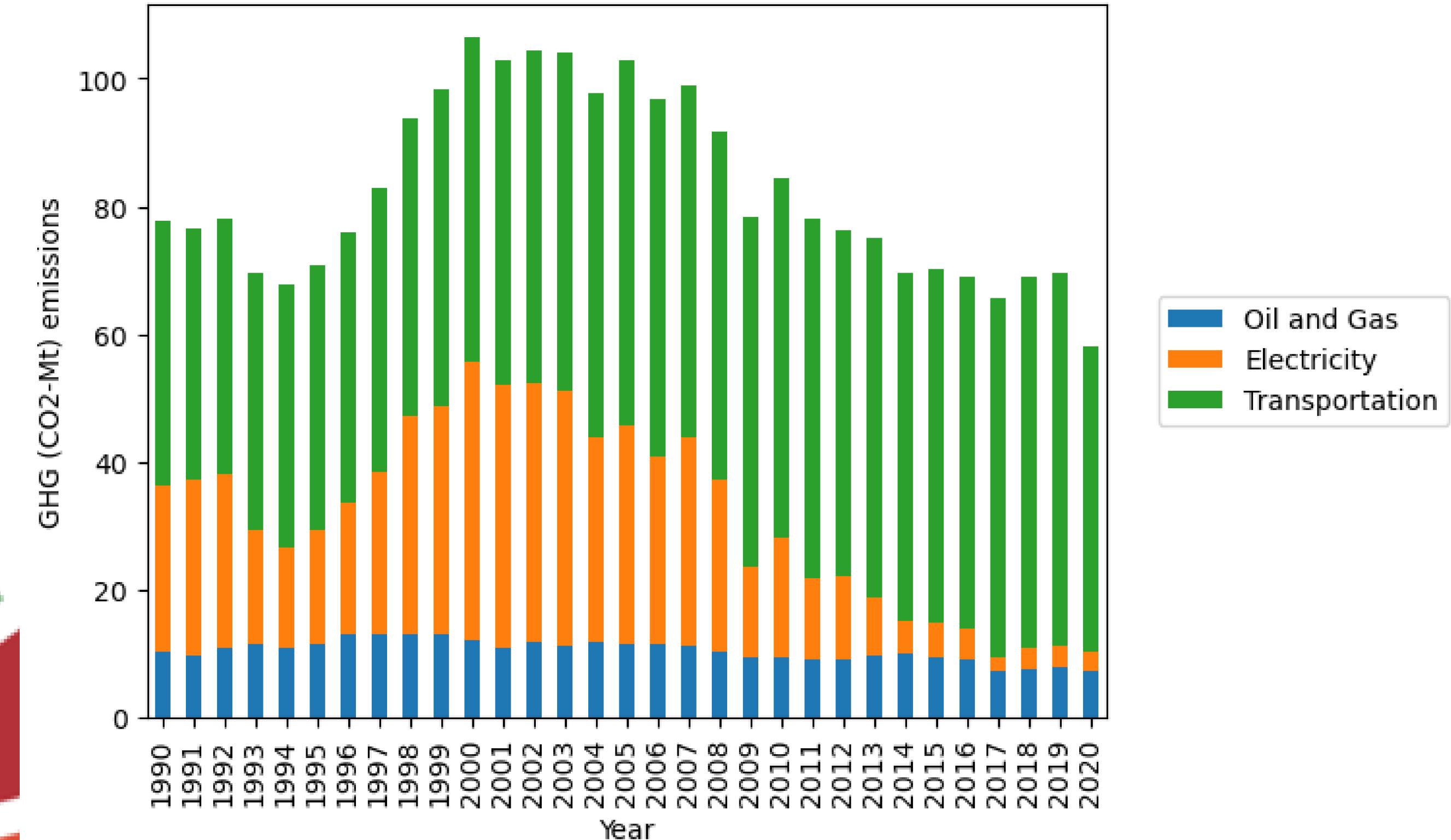
Alberta GHG Emission per Industry





Ontario emissions per Industry

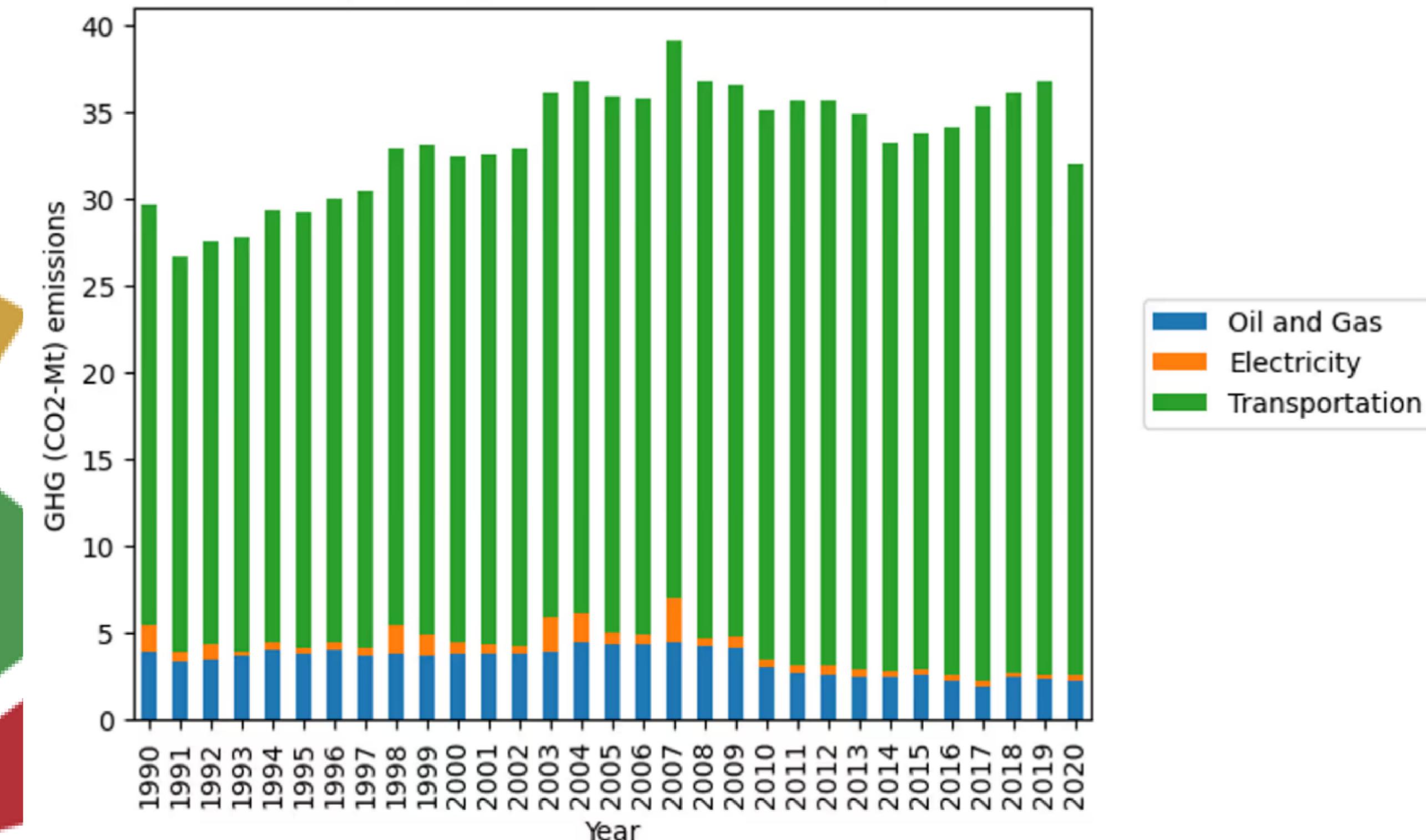
Ontario GHG Emission per Industry





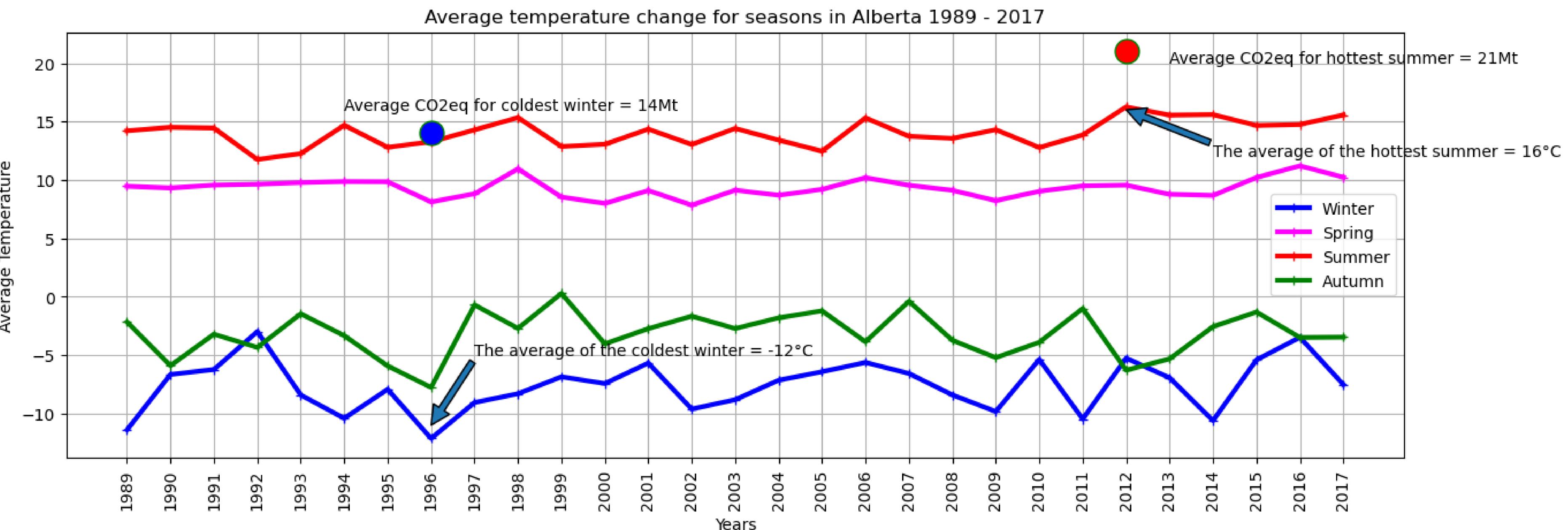
Quebec emissions per Industry

Quebec GHG Emission per Industry



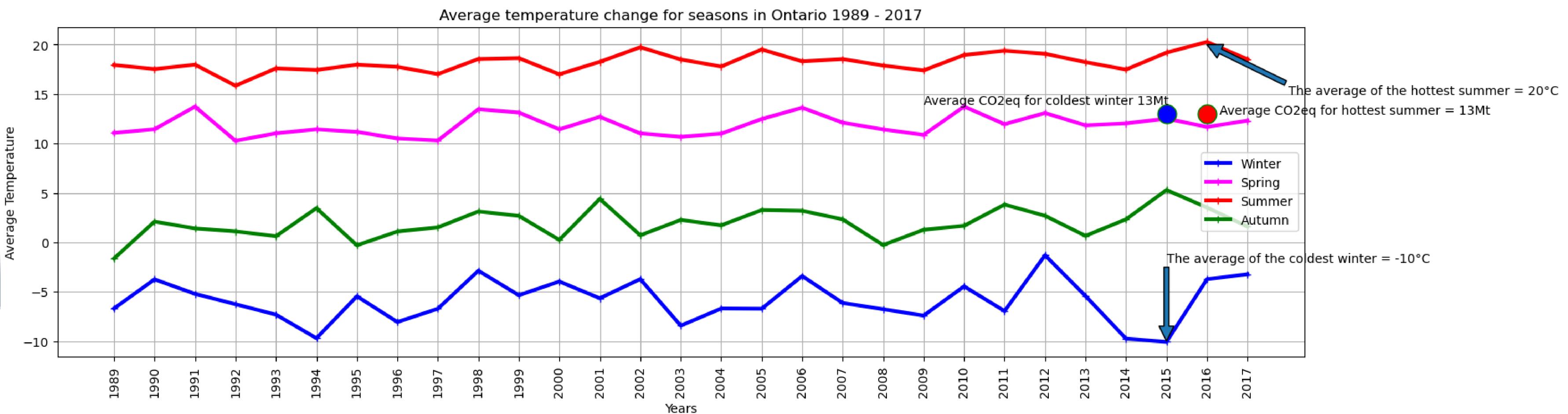


Temperature data per seasons - Alberta





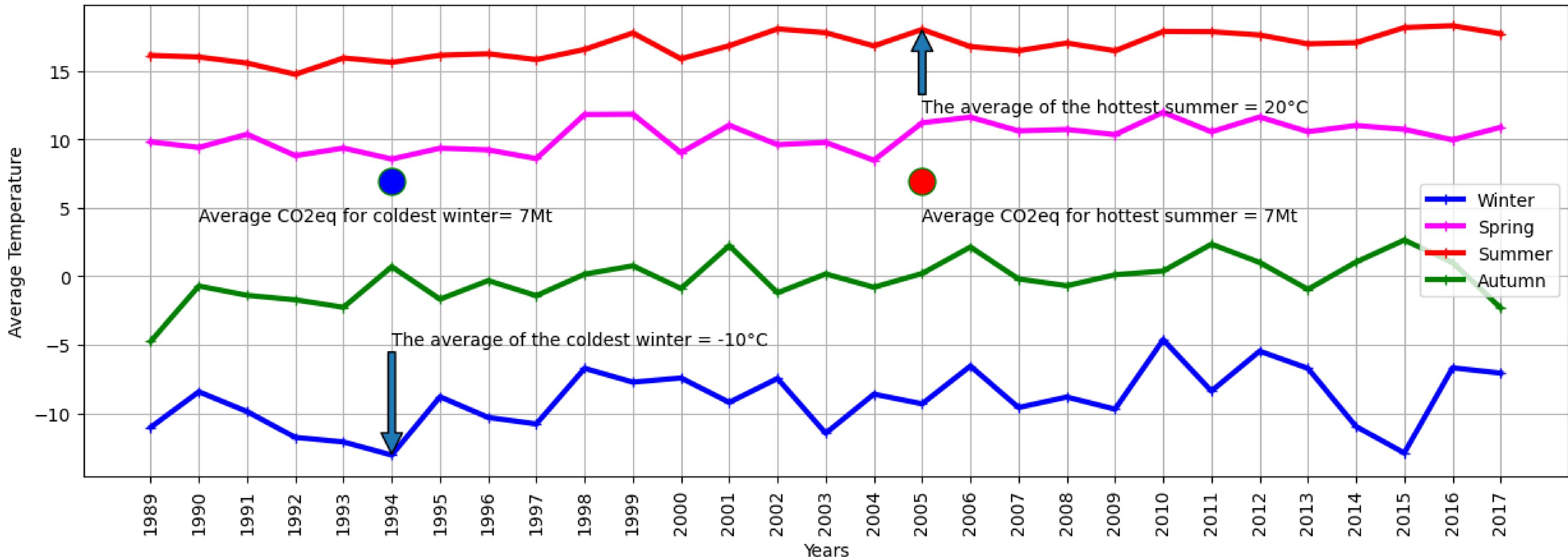
Temperature data per seasons - Ontario





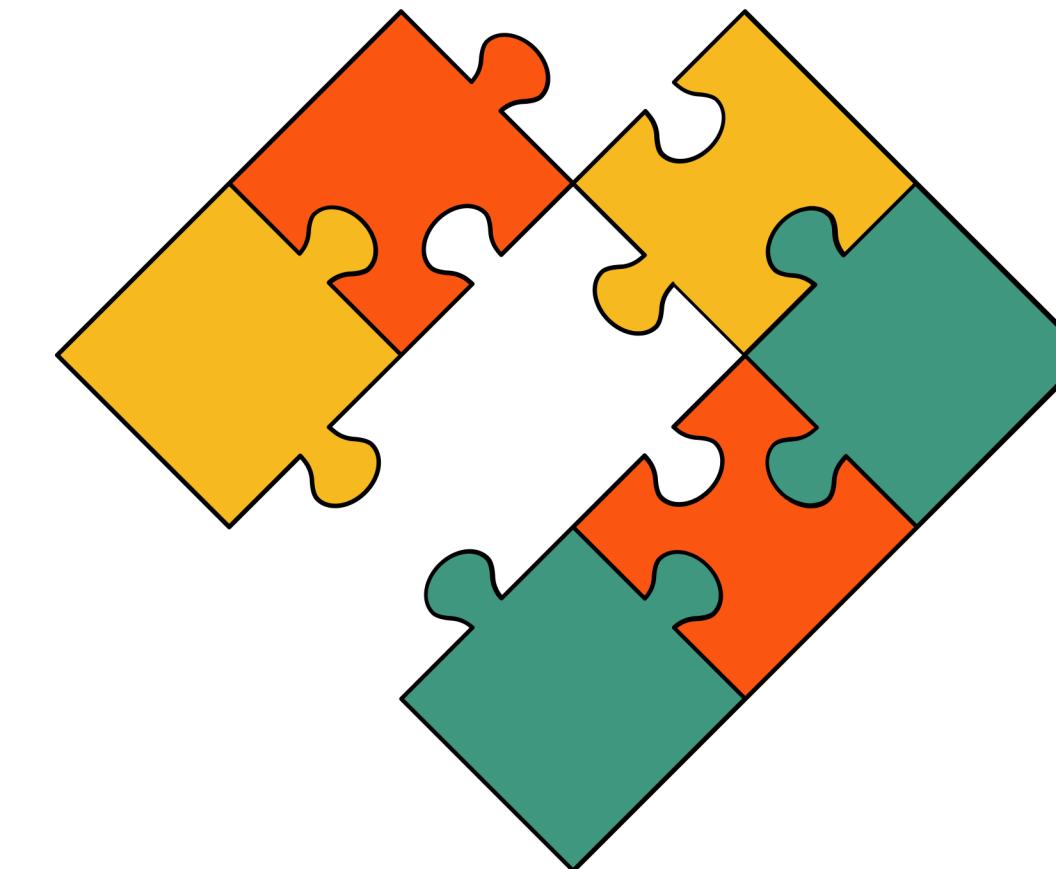
Temperature data per seasons - Quebec

Average temperature change for seasons in Quebec 1989 - 2017





Challenges





Challenges during the process

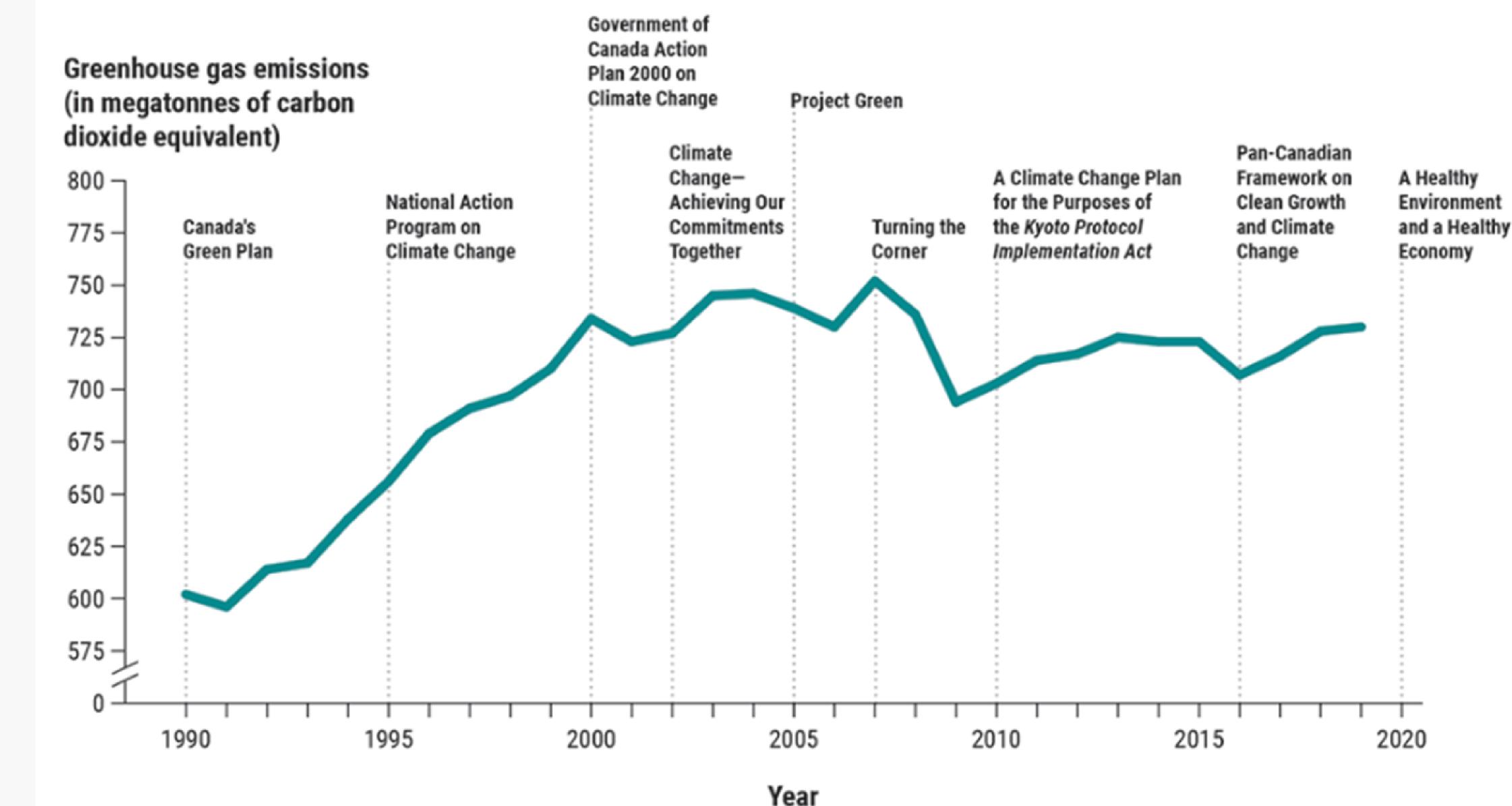
During the process of cleaning, organizing and create all the visualizations we faced some challenges such as:

- Consolidate multiple Data Frame into one.
- Canada GHG Emissions per Province and Territory with Northwest Territories and Nunavut as one from 1990 - 1999 and separated after that.
- Finding ways to make the graph detailed as we wished.



Evolution of regulations by year versus GHG Emissions

Exhibit 5.4—Canada's overall emissions grew from 1990 to 2019, despite numerous plans for reducing greenhouse gas emissions





Target 13.a - Implement the commitment undertaken by developed-country parties to the United Nations Framework Convention on Climate Change to a goal of mobilizing jointly \$100 billion annually by 2020 from all sources to address the needs of developing countries in the context of meaningful mitigation actions and transparency on implementation and fully operationalize the Green Climate Fund through its capitalization as soon as possible

Indicator 13.a.1 - Amounts provided and mobilized in United States dollars per year in relation to the continued existing collective mobilization goal of the \$100 billion commitment through to 2025



Lessons Learned





Conclusions





Conclusions and Findings

- Canada had a good start controlling the GHG emissions, but since 2007 is higher than UN target.
- Alberta is 4th in population, but first in emissions coming from Oil and Gas industry.
 - Ontario was able to reduce considerably the emissions from Electricity.
 - Quebec has a challenge off reduce emissions from transportation.
- The average temperature had started to increase and with the current emissions trend, will do more.



Questions?



13 CLIMATE ACTION



SUSTAINABLE DEVELOPMENT GOALS

Thank
you!

