



Environment and
Climate Change Canada

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Introduction to Canada's Emissions Inventories

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Canada

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Canada 

Outline

- Air Pollutant Emissions Inventory
- Black Carbon Inventory
- Greenhouse Gas Reporting Program
- Canada's Official Greenhouse Gas Inventory



Air Pollutant Emissions Inventory (APEI)

A Comprehensive Assessment of Air Pollutant Emissions in Canada

- The Air Pollutant Emissions Inventory (APEI) is a comprehensive inventory of 17 air pollutants at the national, provincial and territorial level:
 - Particulate matter, sulphur oxides, nitrogen oxides, volatile organic compounds, carbon monoxide, ammonia, lead, cadmium, mercury, dioxins and furans, polycyclic aromatic hydrocarbons (4 species), and hexachlorobenzene)
- 11 source categories, 74 sectors and 72 subsectors
- 2019 APEI covers 1990-2017



An International Reporting Obligation

- Since 1979, the Convention on Long-range Transboundary Air Pollution (CLRTAP) mandates that all Parties report atmospheric pollutant emissions to the United Nations Economic Commission for Europe (UNECE) by February 15th of each year
- The APEI fulfills Canada's obligations to the UNECE by releasing an annual report of emissions by sources and sectors



APEI Incorporates NPRI Data

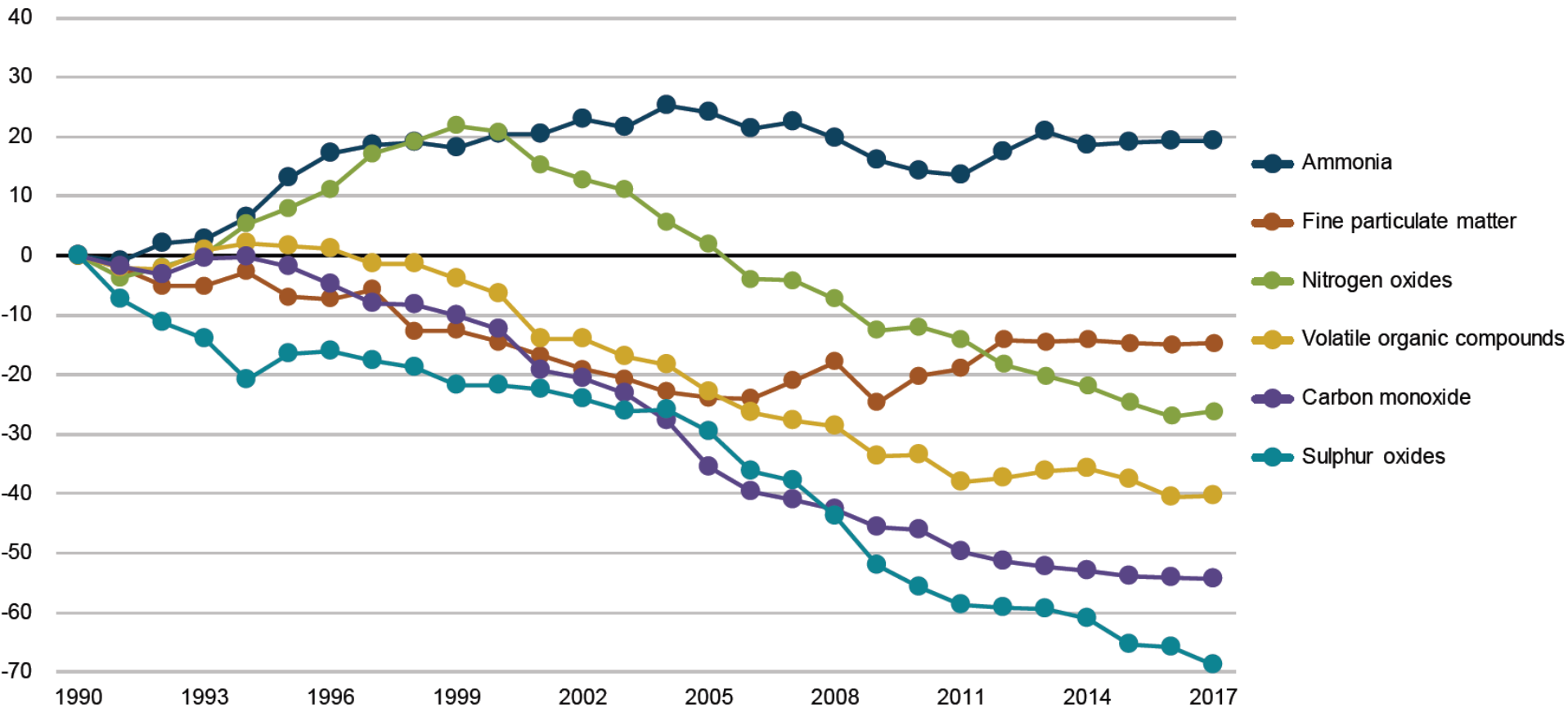
- Both facility-reported data and ECCC in-house estimates are used to build the

Table A1-1 2017 Air Pollutant Emissions Inventory

Air Pollutant Emissions Inventory sectors	Facility-reported data ^a	In-house estimates ^b	Activity data used for in-house estimates
TRANSPORTATION AND MOBILE EQUIPMENT			
Air Transportation		✓	2017
Heavy-duty Diesel Vehicles		✓	2017
Heavy-duty Gasoline Vehicles		✓	2017
Heavy-duty LPG/NG Vehicles		✓	2017
Light-duty Diesel Trucks		✓	2017
Light-duty Diesel Vehicles		✓	2017
Light-duty Gasoline Trucks		✓	2017
Light-duty Gasoline Vehicles		✓	2017
Light-duty LPG/NG Trucks		✓	2017
Light-duty LPG/NG Vehicles		✓	2017
Marine Transportation		✓	2015
Motorcycles		✓	2017
Off-road Diesel Vehicles and Equipment		✓	2017
Off-road Gasoline/LPG/NG Vehicles and Equipment		✓	2017
Rail Transportation		✓	2017
Tire Wear and Brake Lining		✓	2017
ELECTRIC POWER GENERATION (UTILITIES)			
Coal	✓		
Diesel	✓		
Natural Gas	✓		
Waste Materials	✓		
Other (Electric Power Generation)	✓		

Since 1990, Air Pollutants decreasing in Canada - mostly

Percentage change from 1990 level



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Mercury, Lead and Cadmium Emissions, Canada (1990 to 2017)

Percentage change relative to 1990



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Accessing APEI Data

- [APEI Report 2019](#)
- [APEI Online Data Search](#)
- [Downloadable Data](#)

Air Pollutants Emissions Inventory online search

Use this query tool to obtain information on national, provincial and territorial air emission summaries for key air pollutants, heavy metals and persistent organic pollutants from anthropogenic emission sources. Air emissions of these pollutants are available nationally, provincially, territorially from 1990 to present.

Disclaimer

Data available on this website are current as of February 15, 2019. Ongoing improvements or future corrections may result in updates. As part of the quality control process, we conduct a number of data checks to ensure the data is of the highest possible quality. Data are also available on [Open data](#).

Search criteria

Annual data

Year

Substance

Province or territory

Emission trends for

Year range

Substance

Province or territory

Resources

Resource Name	Resource Type	Format	Language	Links
EN_APEI-Can-Prov_Terr.csv	Dataset	CSV	English	Access
FR_APEI-Can-Prov_Terr.csv	Dataset	CSV	French	Access
View ECCC Data Mart (English)	Website	HTML	English	Access
View ECCC Data Mart (French)	Website	HTML	French	Access



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Black Carbon Inventory

Black Carbon

- Black carbon (BC) is a short-lived, small aerosol (or airborne) particle
- Linked to both climate warming and adverse health effects
- Reducing black carbon emissions is of particular interest in polar regions, such as the Arctic, which are especially sensitive to the effects of black carbon



An International Reporting Obligation

- In 2015, Canada committed to publish an annual black carbon inventory (Arctic Council)
- Also a voluntary submission under the CLRTAP
- The first black carbon inventory was published in 2015 and annually ever since
- Continual improvement is a key principle, with many improvements each year



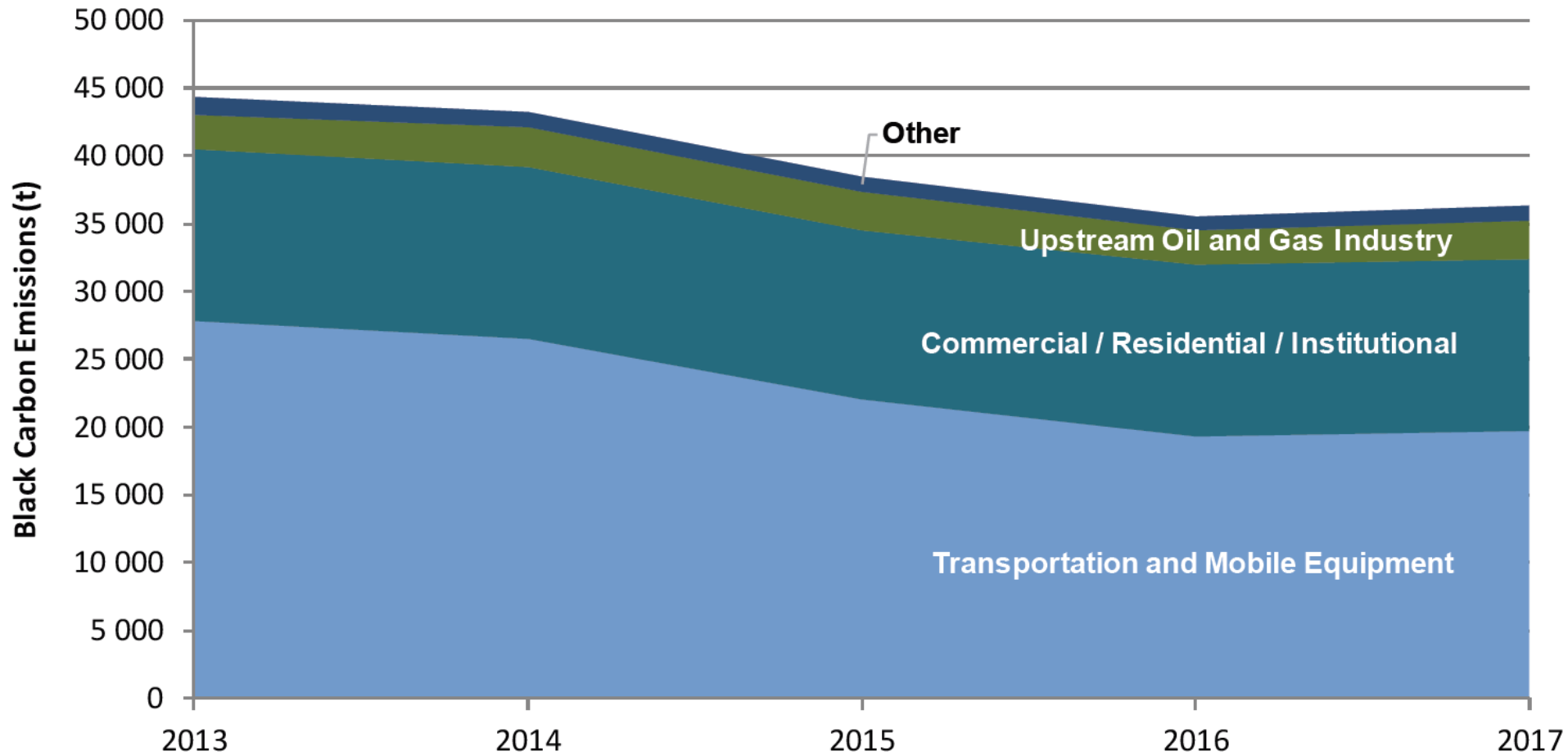
Inventory Scope and Features

- National/ provincial emissions, by source and sector
- Estimated by applying BC/PM_{2.5} fractions to combustion-related PM_{2.5} emissions
- [2019 Black Carbon Inventory](#) covers 2013-2017

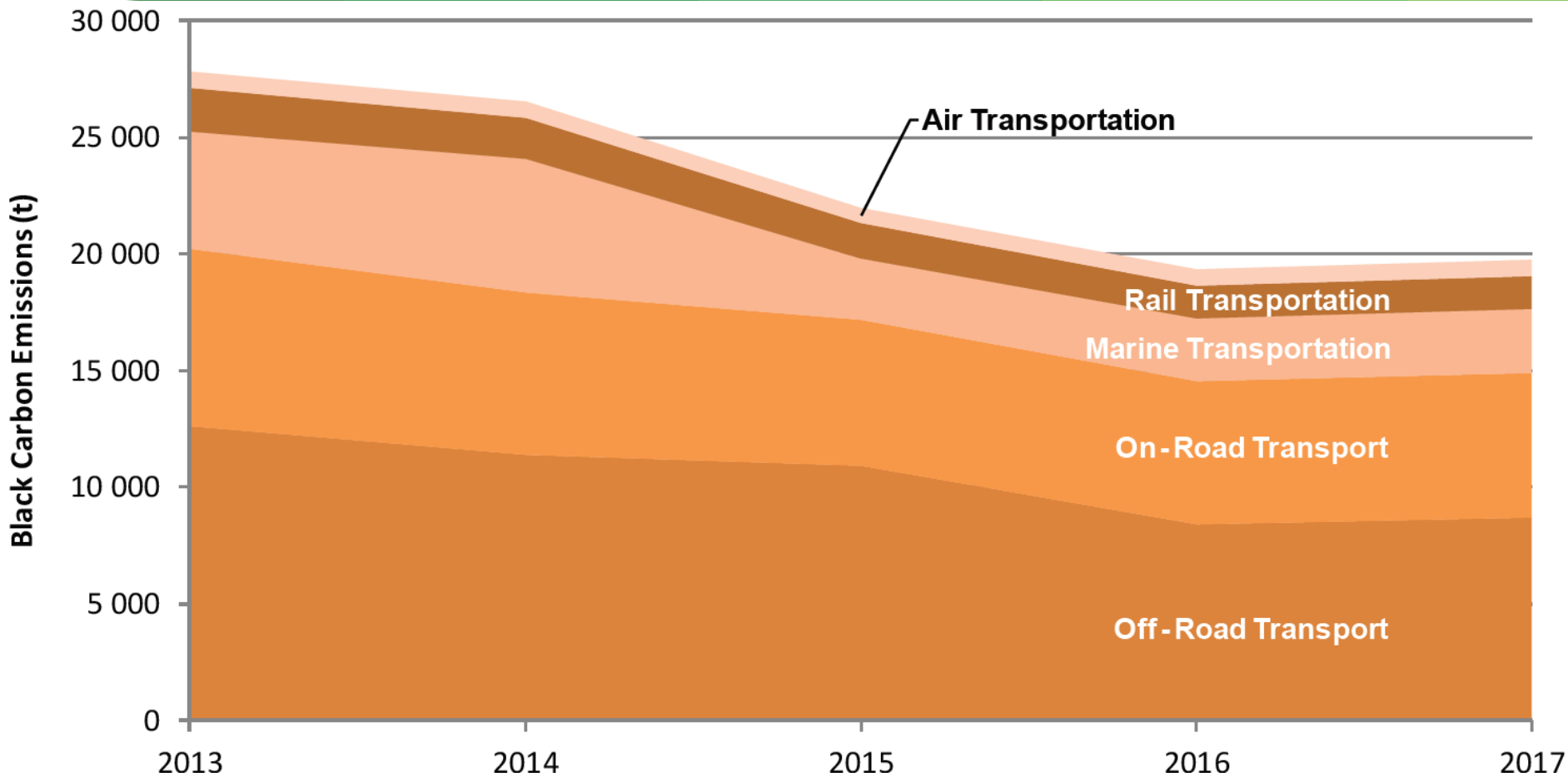


**CANADA'S BLACK
CARBON INVENTORY**
2018 EDITION

Black Carbon Sources (2013-2017): Transport, Residential Wood Heating



Transportation (2013-2017) Sources: On- and Off-road



Greenhouse Gas Reporting Program (GHGRP)

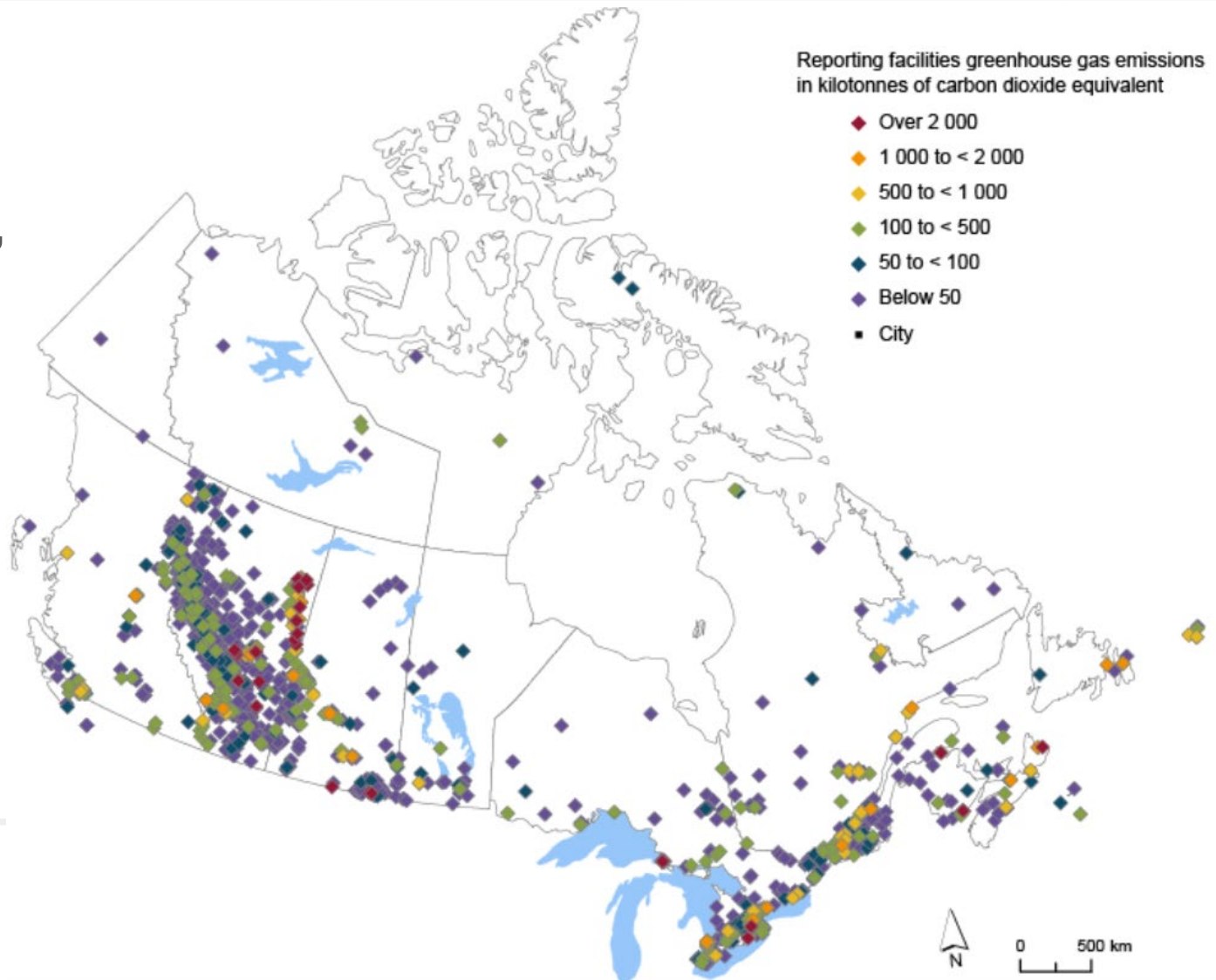
The Greenhouse Gas Reporting Program

- The Greenhouse Gas Reporting Program (GHGRP) collects information on greenhouse gas emissions from facilities across Canada
- The program has collected data from facilities every year since 2004
- Currently expanding to collect additional data from key industry sources, and more facilities are now required to report

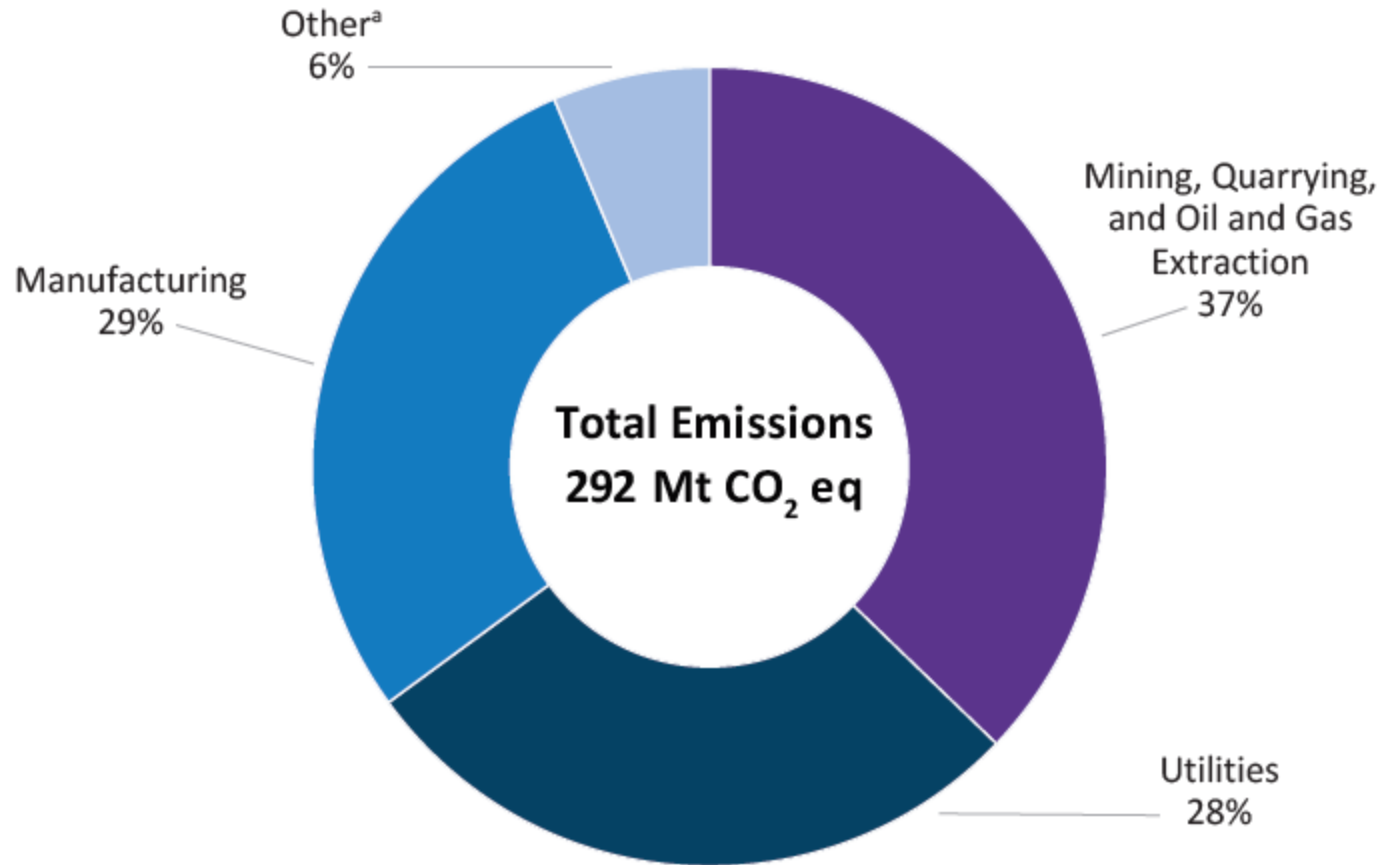


GHGRP Facilities (2017)

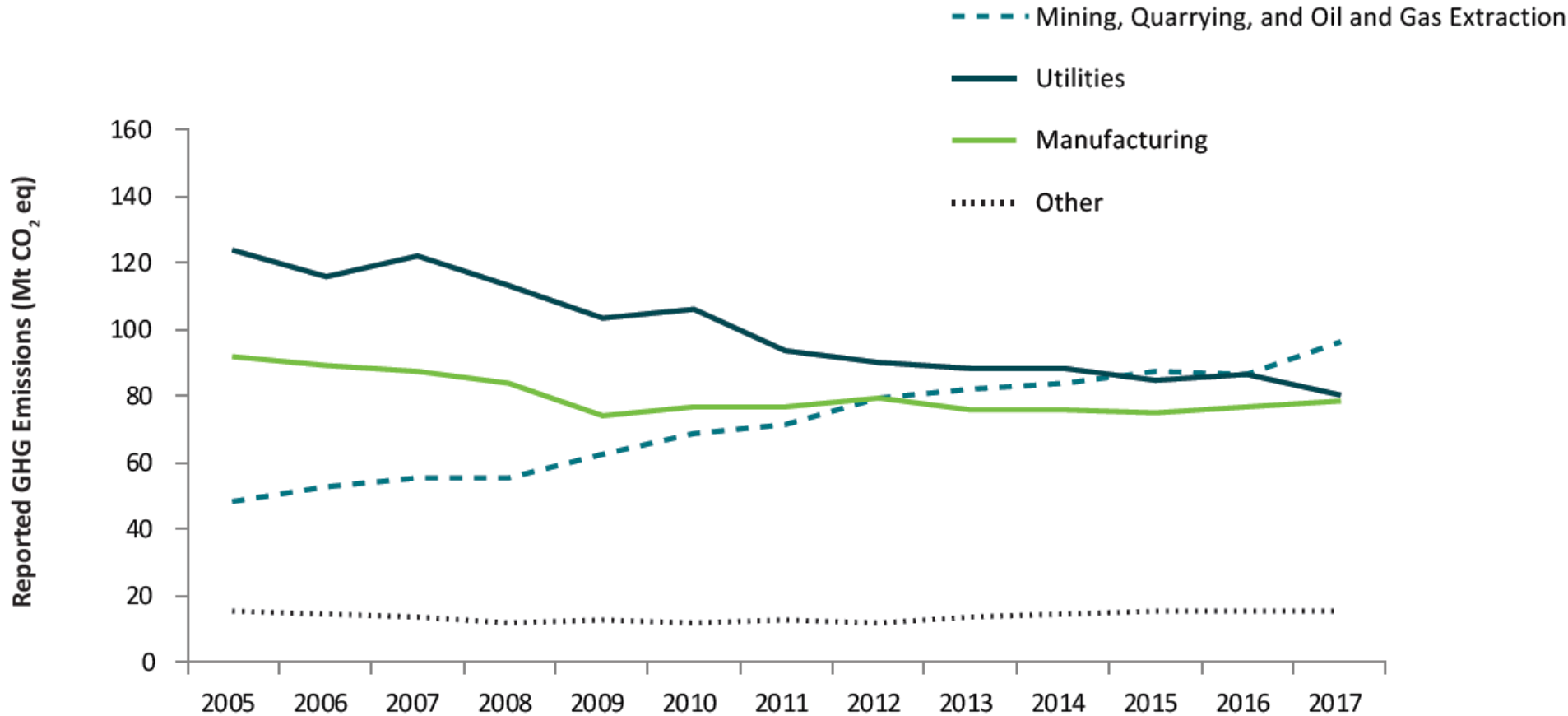
1,622 facilities reported GHG, totaling 292 million tonnes of carbon dioxide equivalent (CO₂ eq.)



GHG Emissions by Industry Sector (2017)



Long-Term Sectoral Trend (2005-2017)



Accessing GHGRP Data

- [Overview of Reported Emissions](#)
- [Online data search](#)
- [Downloadable data](#)
- [Interactive map](#)

Greenhouse Gas Reporting Program data search

Welcome to the Greenhouse Gas Reporting Program (GHGRP) data search.

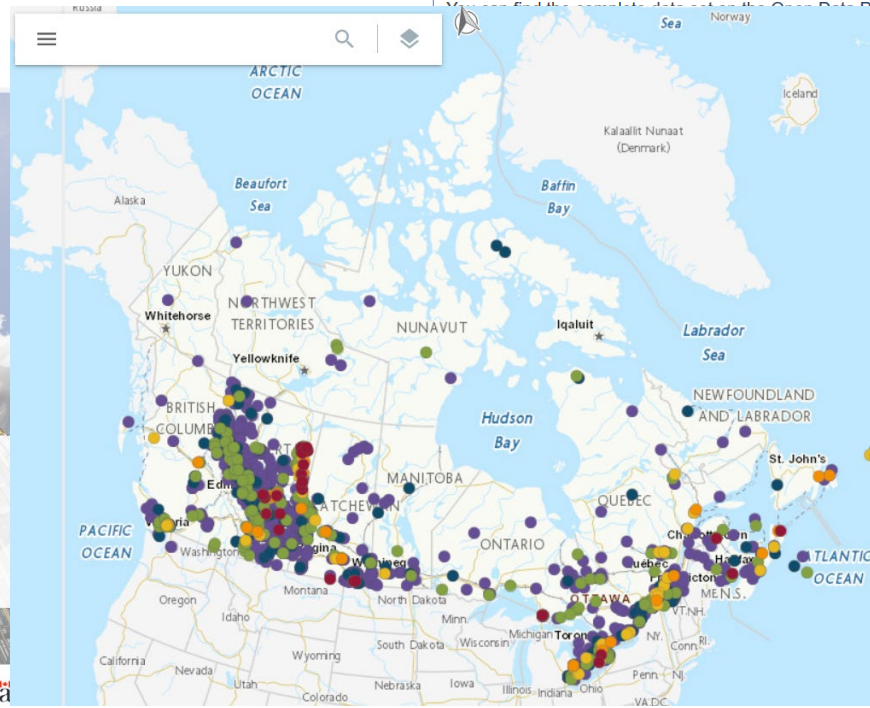
This search tool provides the ability to search reported facility data. You can select just one, or a combination of multiple search criteria. When you have entered your search criteria, click "Search" to start your search.

Currently, only 2016 and 2017 data is available through this tool. Data is current as of October 22, 2018.

Province / territory:

City:

North American Industry Classification System (NAICS) code:



Canada's Official Greenhouse Gas Inventory

Greenhouse Gas National Inventory Report

- The National GHG Inventory is the official national account of actual GHG sources and sinks and their trends
- 7 GHGs: carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), sulfur hexafluoride (SF₆), perfluorocarbons (PFCs), hydrofluorocarbons (HFCs), nitrogen trifluoride (NF₃)
- 2019 National Inventory covers 1990-2017

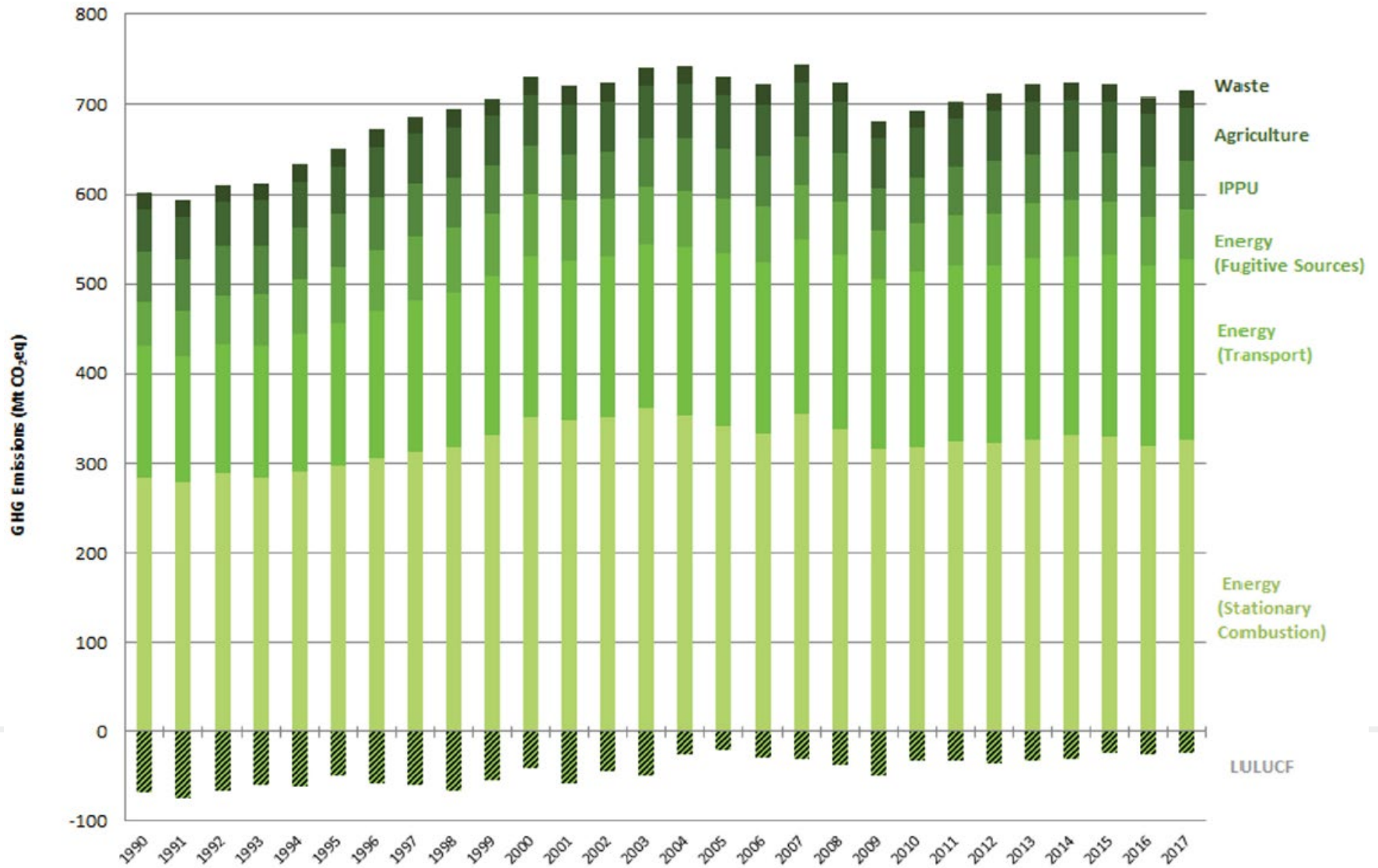


An International Reporting Obligation

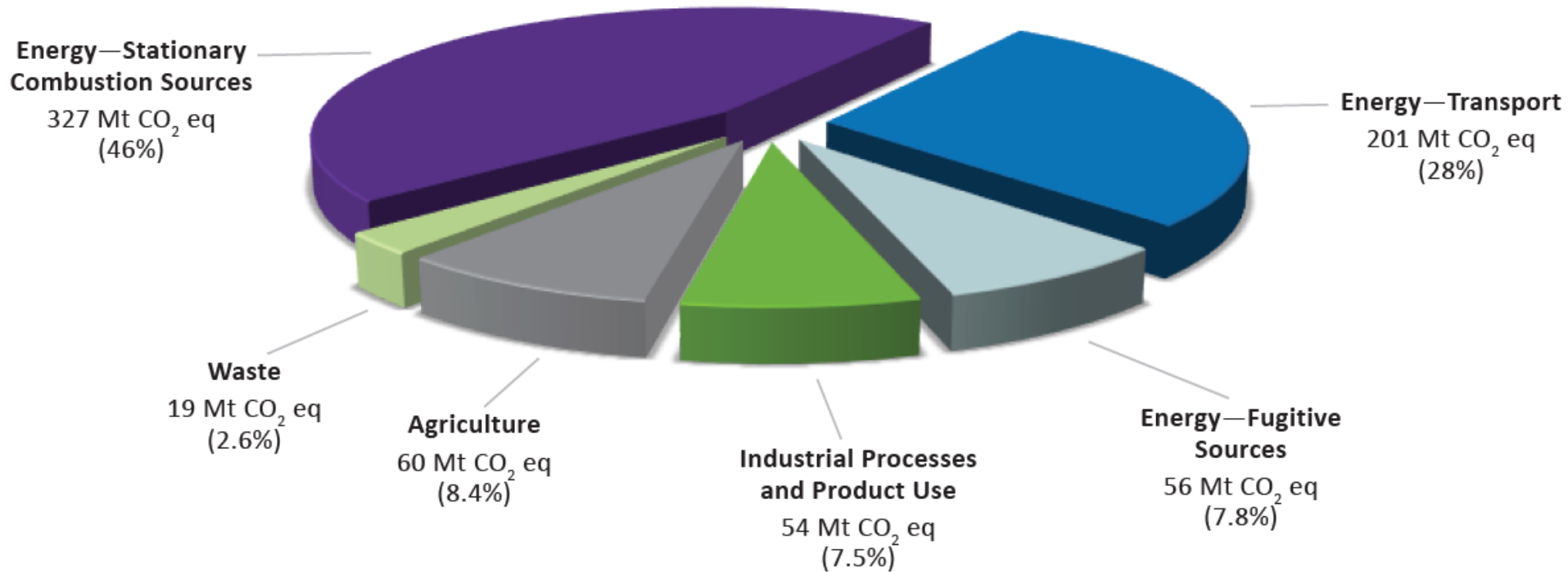
- As a signatory to the United Nations Framework Convention on Climate Change (UNFCCC), Canada is obligated to annually prepare and submit a national GHG inventory of emissions by sources and removals by sinks
- A standardized and detailed National Inventory Report (NIR) and common reporting format tables must be submitted to the UNFCCC by April 15 every year



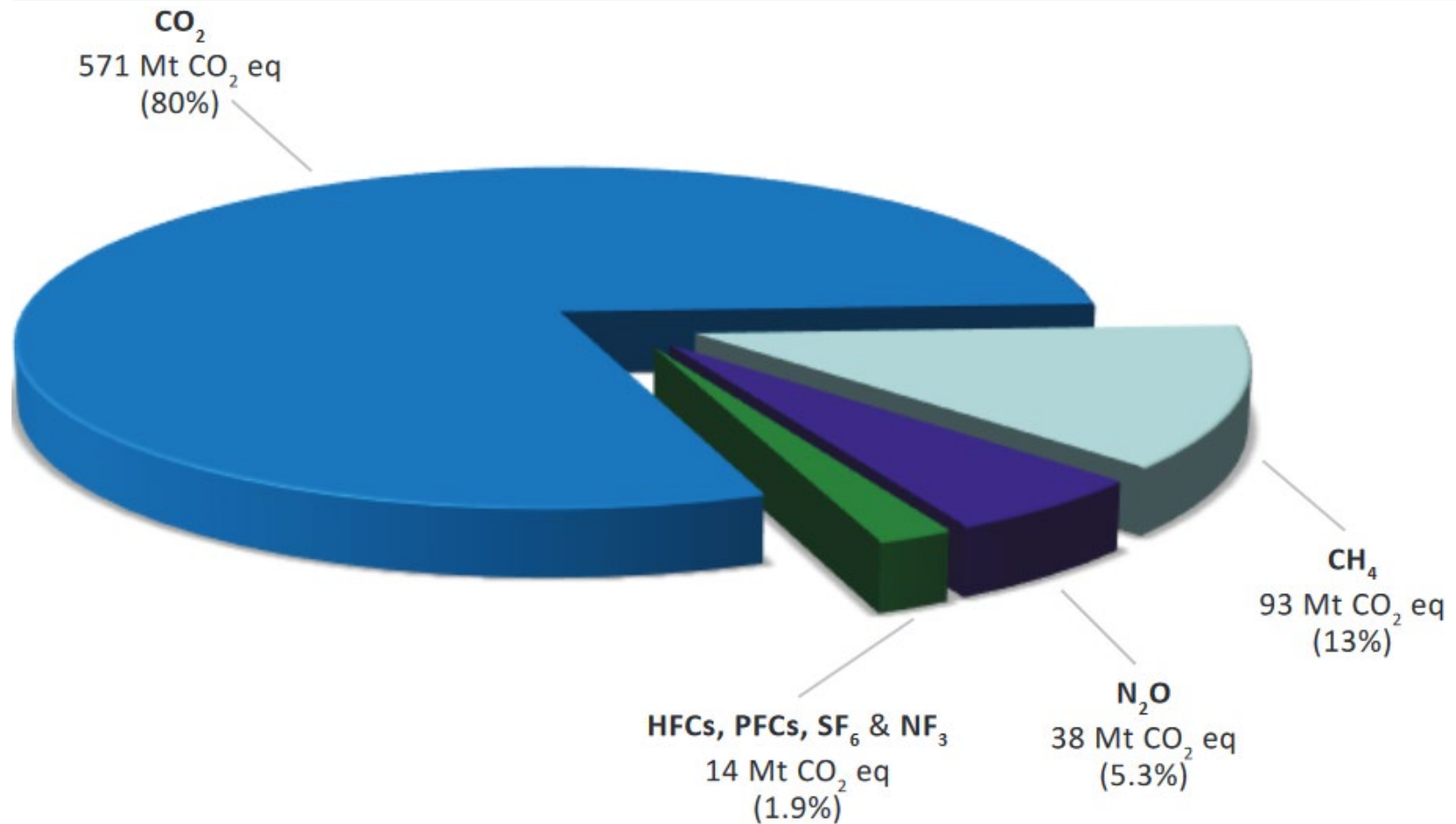
Canadian GHG Emission Trend (1990-2017)



Emissions by Sector (2017)



Emissions by GHG (2017)



Accessing NIR Data

- [National Inventory Reports](#)
- [Downloadable data](#)

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Thank you!

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Contacts & Links

- **APEI:** ec.iepa-apei.ec@canada.ca | www.canada.ca/en/environment-climate-change/services/pollutants/air-emissions-inventory-overview
- **Black Carbon Inventory:** ec.iepa-apei.ec@canada.ca | <https://www.canada.ca/en/environment-climate-change/services/pollutants/black-carbon-emissions-inventory>
- **GHG Inventories:** ec.ges-ghg.ec@canada.ca | <https://www.canada.ca/en/environment-climate-change/services/climate-change/greenhouse-gas-emissions>

