Environment and Climate Change Canada | Environnement et Changement climatique Canada

CANADA'S ACTIONS TO ADDRESS METHANE EMISSIONS

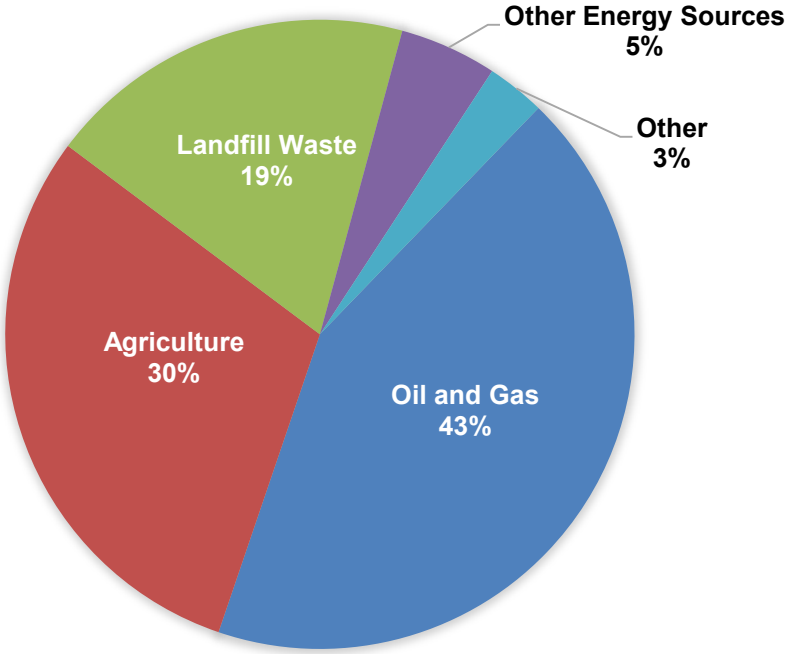
An update to the GMI Steering Committee

David Backstrom
November 19th 2019
Paris, France

Canada

Key Sources of Methane in Canada

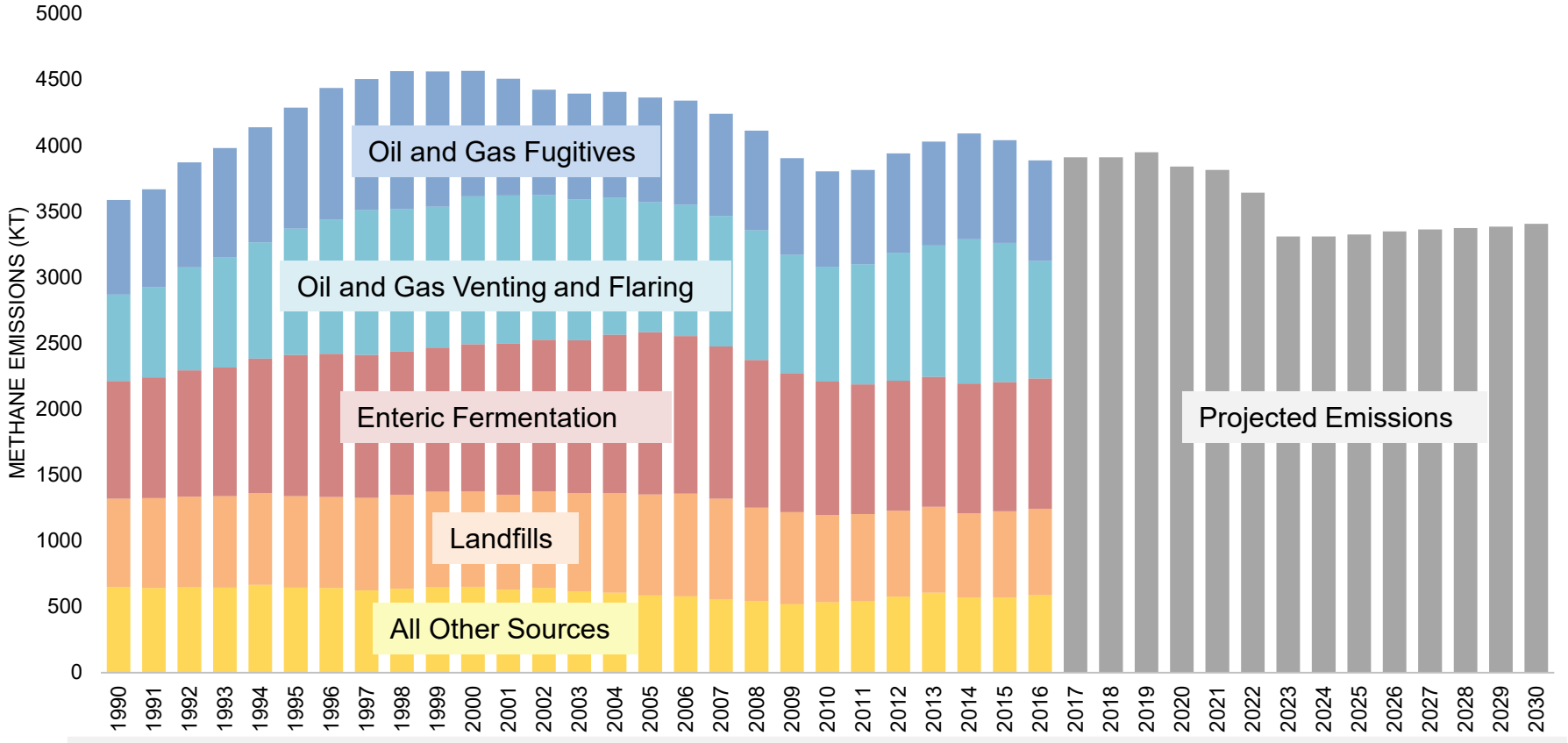
- In 2017, methane emissions made up 93 Mt of Canada's total GHG emissions (716 Mt)
- These emissions were from:
  - Oil and gas (40 Mt)
  - Agriculture (28 Mt)
  - Landfill waste (18 Mt)
  - Stationary combustion/energy sources (6 Mt)
  - Other sources (1 Mt)



Methane Emissions in Canada by Sector, NIR 2019

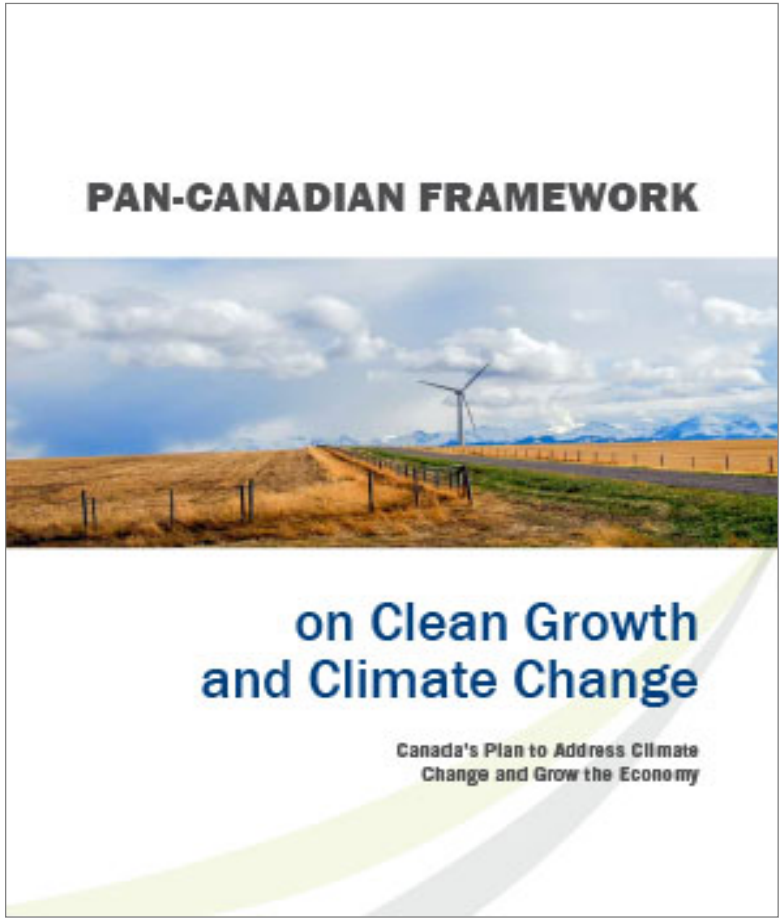
Methane Emission Trends

- Methane emissions in Canada have increased over the past 25 years (in line with the global trend of increasing methane emissions)
- Projected Canadian emissions are expected to decrease by 2025 primarily due to regulations in the oil and gas industry



Data from 2018 National Inventory Report and 2018 GHG Projections Report

DOMESTIC ACTION



Oil and Gas

- In March 2016, Canada adopted a target to reduce emissions of methane from its oil and gas sector by 40% to 45% below 2012 levels by 2025
  - Re-affirmed under the Pan-Canadian Framework
- ECCC published final federal methane regulations in April 2018
  - 20 Mt of methane emissions reductions annually by 2024 (as well as VOCs) from upstream oil and gas facilities
  - Applies to facilities responsible for the extraction, production, primary processing, and transportation of crude oil and natural gas
  - Requirements will be phased-in beginning in January 2020, with full implementation by the end of 2023
- ECCC has been engaging with interested provinces on potential equivalency agreements for the federal and provincial methane regulations

Oil & Gas Methane: Federal Regulations

- Regulatory requirements target **five** key methane sources:

  Implementation – **January 1, 2020**

  1) Fugitive Equipment Leaks
  2) Compressor Vents
  3) Venting during Well Completions (Hydraulic Fracturing)

  Implementation – **January 1, 2023**

  4) Venting from facilities
  5) Venting from Pneumatic Devices

- Designed to provide industry with compliance flexibilities:
  - Allow industry to adapt emission controls as production changes
  - Action not required for low-emission potential facilities
  - Multiple compliance pathways to achieve reductions where and when it makes sense
  - Designed to incent technology development and innovative solutions

Landfills

- Landfills in Canada are managed by provincial and/or regional governments
- Landfilling is the most common waste disposal method in Canada, and organics account for >60% of landfilled waste
- Most large landfills (~150) have gas capture systems due to provincial regulations or other measures, but efficiency and effectiveness vary
- Medium (~200) and small-sized landfills (>3000) are largely uncontrolled

Landfill Action

- Landfill gas capture and organic diversion:
  - Analysis and assessment work (e.g. inventories, surveys, studies) for landfill gas capture and organic diversion

- Food waste reduction
  - Taking Stock: Reducing Food Loss and Waste in Canada (July 2019) - existing policies, programs and initiatives across the food supply chain
  - Engaged P/T, municipalities, industry and NGOs (e.g. national workshop in Feb 2019; enhanced website and social media; F/P/T-industry network)
  - Collaboration with US & Mexico - Commission for Environmental Cooperation:
    - Why And How To Measure Food Loss And Waste: A Practical Guide (2019)
    - Food Matters Action Kit (2019) for youth
  - Development and implementation of the Food Policy for Canada, including a Food Waste Reduction Challenge for industry

Landfill Action (cont)

- Action on landfill gas capture:
  - Potential federal measure to increase capture of methane emissions at large and medium-sized landfills, which would reduce emissions by about 5Mt by 2030
  - Work with provinces and territories to encourage enhanced policies and regulatory requirements for diversion of organics and other biodegradable material
  - Identify regulatory and non regulatory measures to reduce the disposal of waste by 30% by 2030 and by 50% by 2050
  - Canadian Fuel Standard regulations will also include incentive for methane reductions from landfills, agriculture and wastewater

Agriculture

- Agriculture and Agri-Foods Canada (AAFC) is developing a goal for declining emissions intensity, starting with an emission intensity metric which represent total GHG emissions of production chain
- Future opportunities for methane reductions include:
  - Actions that decrease emissions from enteric fermentation, including reduced age at harvest at dietary changes to oils/oilseeds
  - Increased adoption of no-till practices
  - Financial support for offset protocols to incent voluntary installation of manure biogas capture and destruction technologies by livestock producers (potential new revenue stream depending on access to natural gas pipeline system)
  - Continued adoption of nutrient management practices, such as soil nutrient testing, optimisation of the timing of fertilizer application, incorporation of solid and liquid manure and fertilizer, increased manure storage capacity

INTERNATIONAL ACTION

Global Methane Initiative

ARCTIC COUNCIL

CLIMATE & CLEAN AIR COALITION
TO REDUCE SHORT-LIVED CLIMATE POLLUTANTS

United Nations Framework Convention on Climate Change

International Engagement

- Canada is active in addressing methane through a number of international fora:
  - Global Methane Initiative (GMI)
  - Arctic Council - Arctic Council's Arctic Contaminants Action Program and Expert Group on Black Carbon and Methane
  - Climate and Clean Air Coalition (CCAC)
  - United Nations Framework Convention on Climate Change (UNFCCC)
- Canada is the current co-chair of the Global Methane Initiative and served as co-chair of the Climate and Clean Air Coalition from 2016 to 2018
  - Canada hosted the 2018 Global Methane Forum in Toronto in collaboration with the GMI and the CCAC, and is helping to organize the 2020 Global Methane Forum in Geneva
  - Canada also co-chairs the GMI sub-committees on biogas and oil & gas

Methane Science

- The measurement of methane emissions is an area of scientific interest in Canada and at the global level
  - the rise in global methane emissions remains in part unexplained
  - rising methane emissions form Asia in particular may inverse the decreasing trend in ground-level ozone

- Work is underway or planned to:
  - Refine Canada's climate and air quality models related to methane
  - Improve estimates of methane and VOC emissions from oil and gas operations
  - Improve quantification of black carbon and ozone precursors emitted by residential biomass burning
  - Improve communication of SLCP science

Thank you!

Questions?