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# Canada's Climate Change Actions and Target

**UNFCCC- SBI 42**  
**Bonn, Germany**  
**June 4, 2015**



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# CANADIAN CONTEXT

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(Photo credit: Environment Canada)

*As an Arctic nation, Canada faces unique circumstances. Canada has an extreme, highly variable climate that contributes to higher energy use for space heating and cooling.*



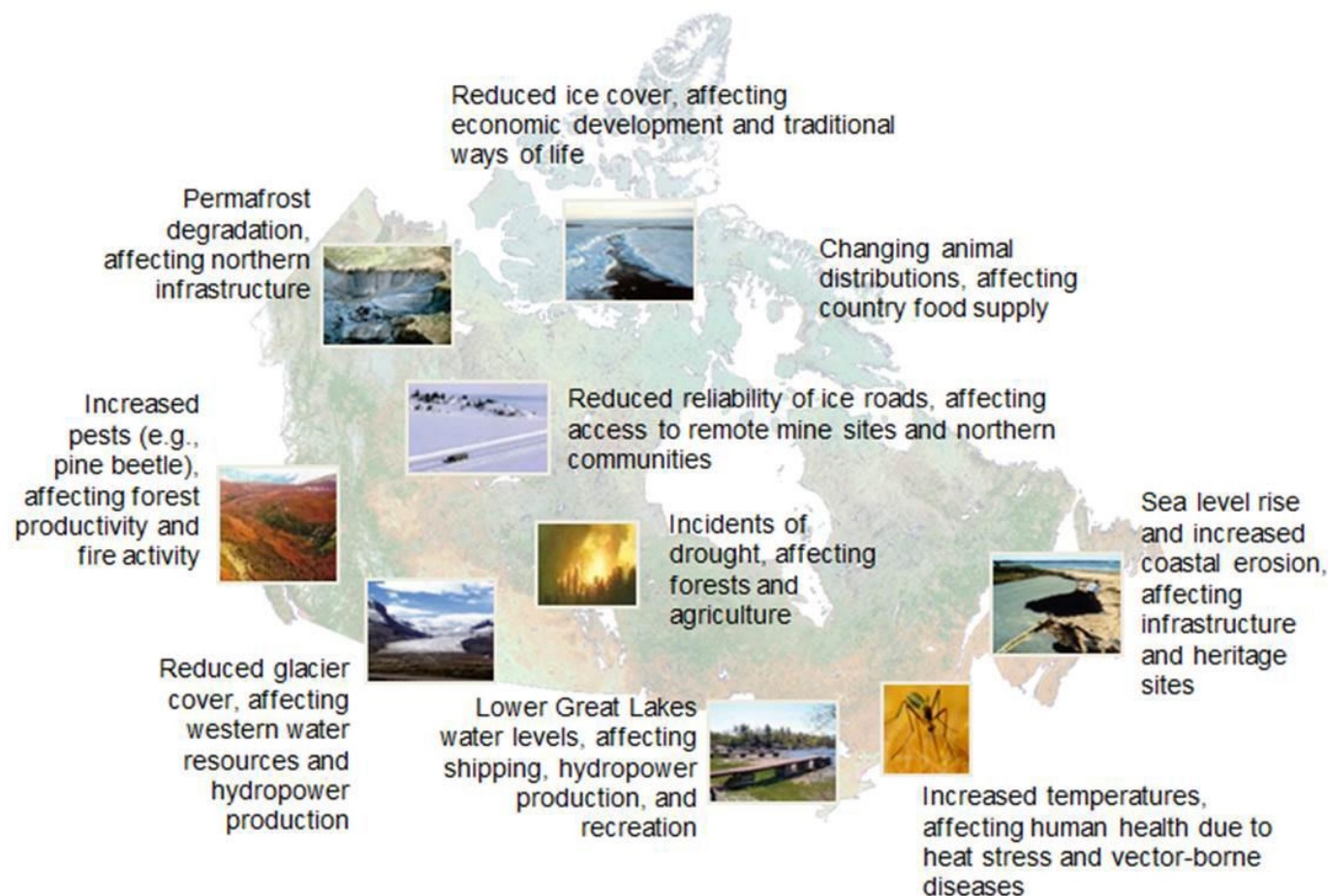
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# Canada is impacted by climate change



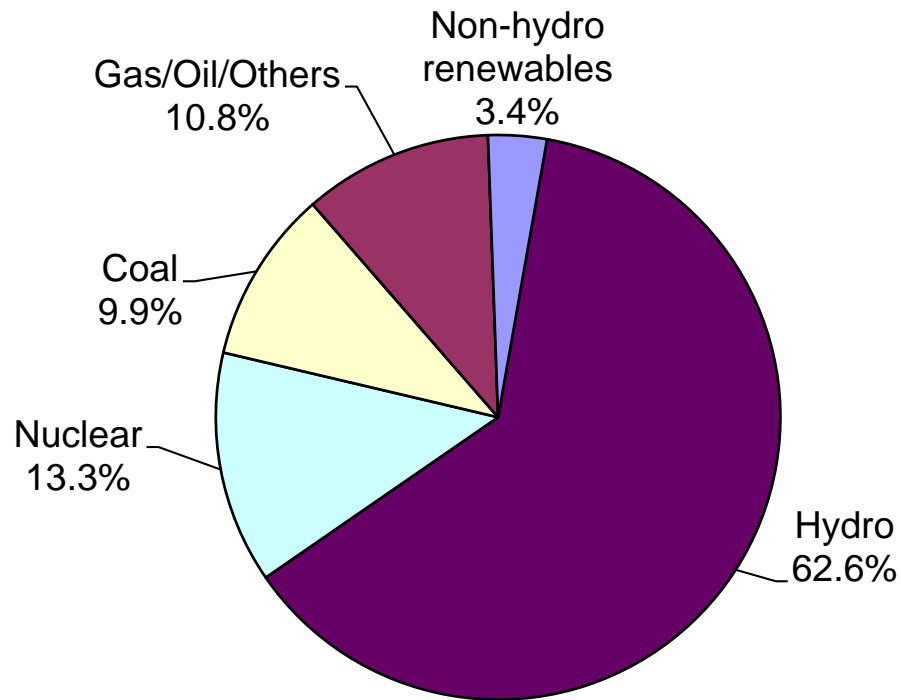
# Canada's national circumstances

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- Canada's geographic, demographic, and economic circumstances influence its GHG emissions profile and make addressing climate change challenging
  - Extreme, variable climate contributes to higher energy use
  - Large landmass and low population density contributes to longer travel times and higher demand for freight transportation
  - Faster than average population growth vs. other developed countries
  - Resource-based, export-oriented economy with sustained growth



# Canada's electricity generation is almost 80% non-emitting



Source: Statistics Canada, Electric Power and Generation -Annual (CANSIM 127-0007), 2013.



# Canada is one of the most decentralized federations in the world

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- Canada is a federation comprised of a central federal government, 10 provincial governments, 3 territories
- Environment is an area of shared jurisdiction based on various constitutional powers
  - Federal power over international borders; international relations; trade/commerce; navigation/shipping; coasts/fisheries; criminal law; laws for peace, order and good government (i.e., emergency & national concern)
  - Provincial power over municipalities; local works; property and civil rights; provincially owned lands and natural resources



# Institutional arrangements

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- Emissions of GHGs are addressed through legislation at both federal and provincial levels
  - The *Canadian Environmental Protection Act, 1999* (CEPA) represents main federal instrument for regulating GHGs
  - CEPA allows for equivalency agreements to avoid regulatory overlap
    - Agreement reached with Nova Scotia on coal-fired power plants
- Fora exist for engagement, collaboration between levels of government and with other partners and stakeholders
  - Canadian Council of Ministers of the Environment represents primary mechanism for climate change engagement among federal and provincial/territorial governments
  - Working groups established with industry stakeholders for the development of regulations



# Institutional arrangements cont.

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- Environment Canada is the federal policy lead for climate change programming and actively engages with many federal departments and agencies.
- Science, modelling, and risk assessment support quality evidence-based decision making and goal of being world-class regulator.
- Efforts on climate change also support other Government priorities including air quality and health.





# CANADA'S GHG EMISSIONS AND TRENDS



(Photo credit: Environment Canada)

*The Paugan Dam in the Province of Quebec*



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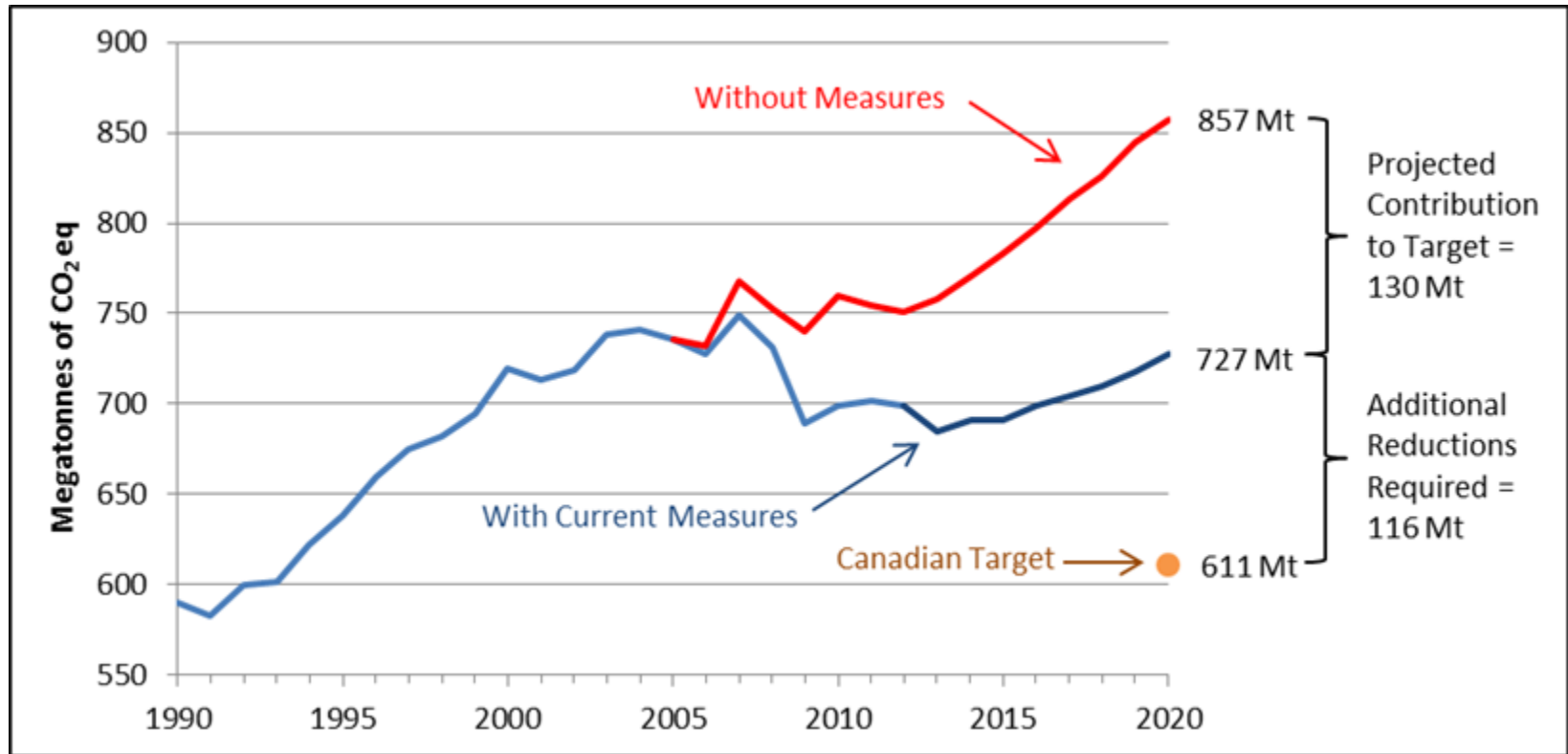
# Canada's 2020 target

2020 GHG Emission Reduction Target	
Reduction Level	17%
Base Year	2005
Target Year	2020
Type	Absolute reduction from base-year emissions
Coverage	Economy wide -100% of Canadian GHG inventory
Gases	CO <sub>2</sub> , CH <sub>4</sub> , N <sub>2</sub> O, SF <sub>6</sub> , PFCs, HFCs, NF <sub>3</sub>
Sectors	All IPCC sectors
GWP	100-year GWP values from the IPCC Fourth Assessment Report
Emission Methodology	IPCC 2006 Guidelines

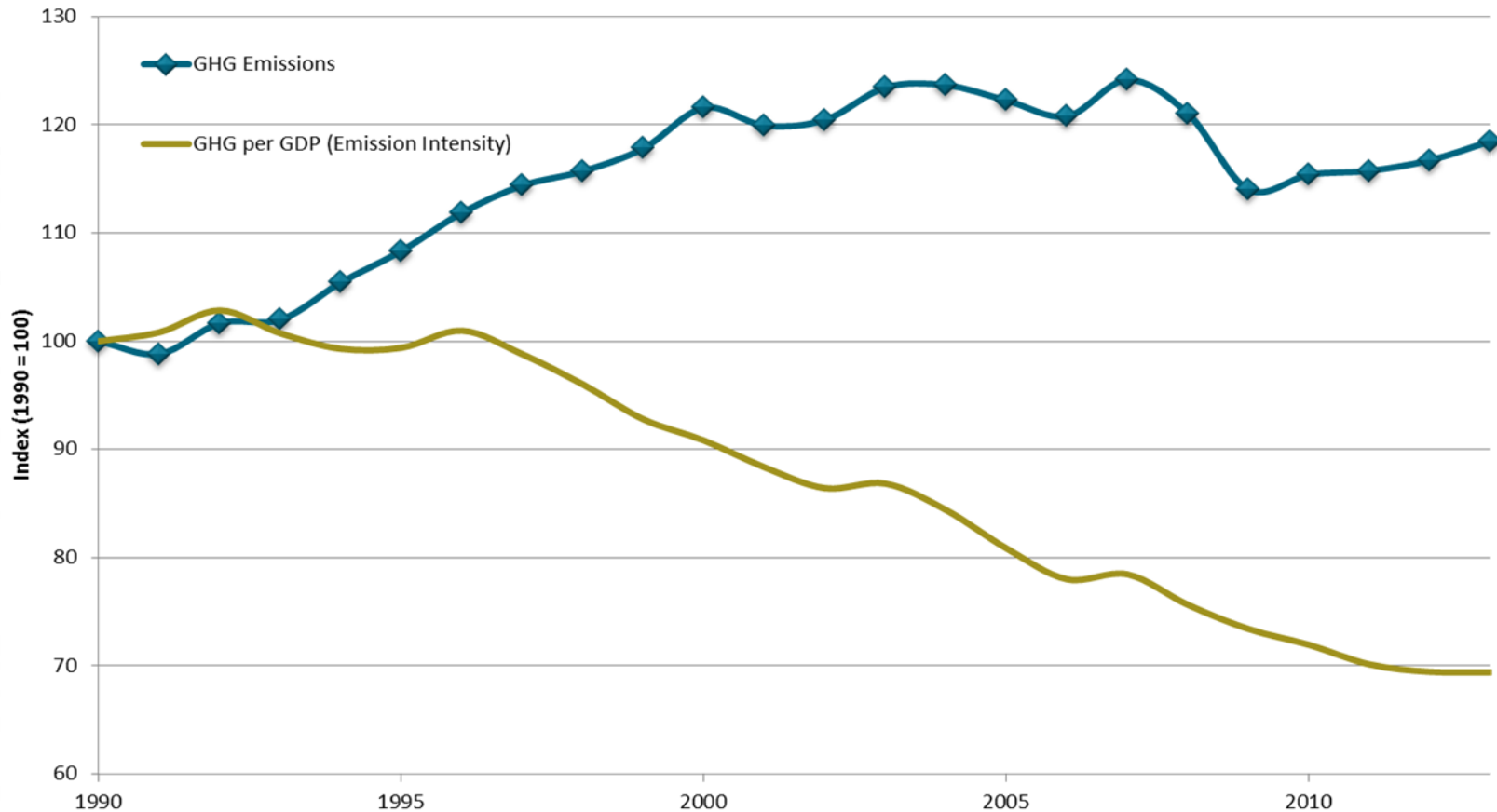
- Target represents significant reductions from projected business-as-usual emission levels



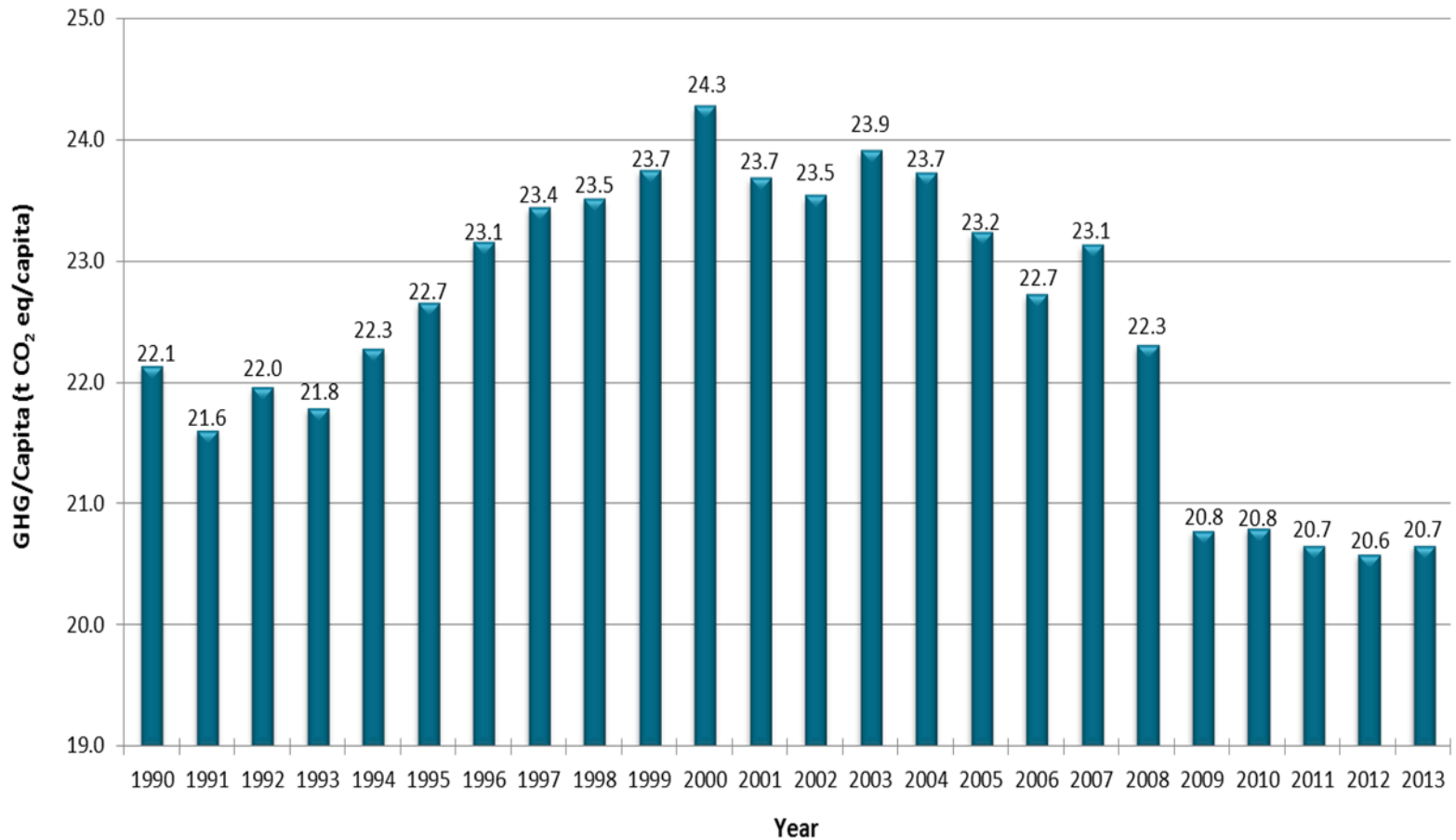
# Canada is making progress in reducing emissions



# Canada's economy has grown faster than GHG emissions

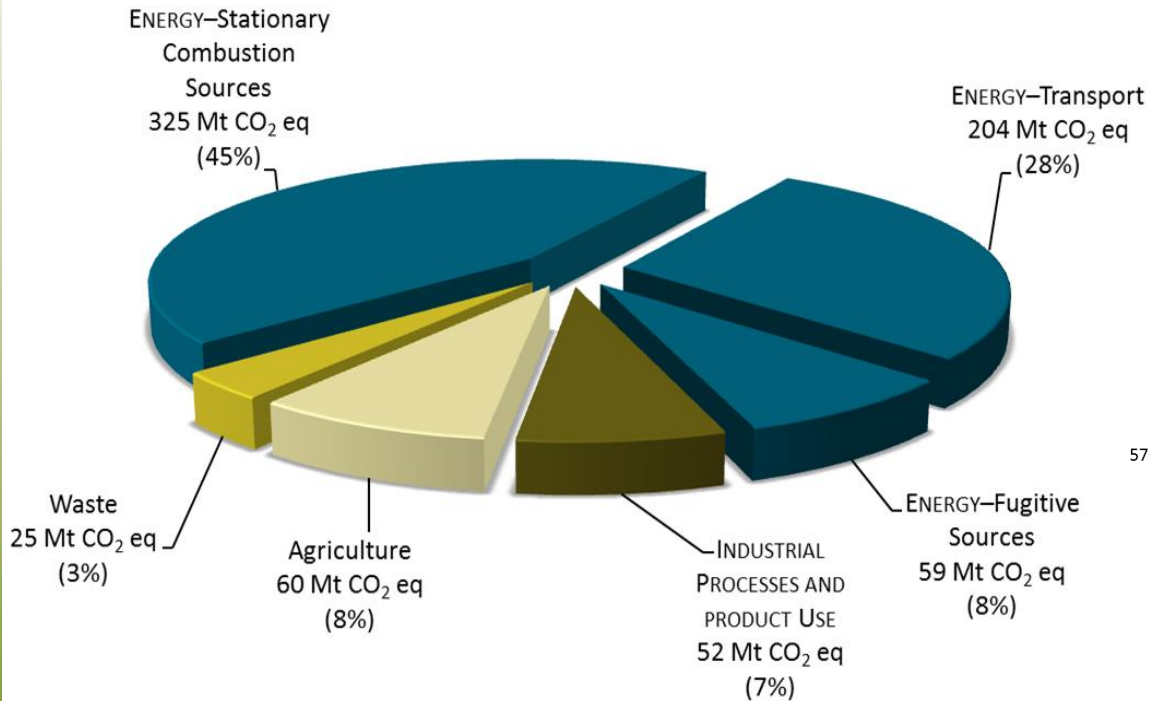


# Per capita emissions remain at historic low levels for Canada



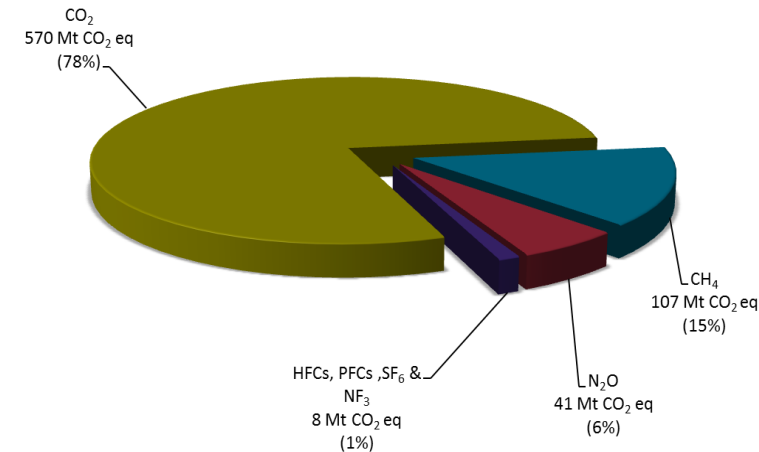
# Canada's 2013 GHG emissions breakdown

## Canada's Emissions by IPCC Sector (726 Mt CO<sub>2</sub>eq)



\*Note: Totals may not add up to due to rounding

## Canada's Emissions by Gas



# CANADA'S ACTION ON CLIMATE CHANGE

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(Photo credit: SaskPower)

*Canada is a world leader in carbon capture and storage (CCS) technology. SaskPower's Boundary Dam is the world's first commercial post-combustion CCS project for coal-fired electricity.*



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# Canada's sector-by-sector regulatory approach is helping to meet our target

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- This approach is allowing Canada to maximize progress on reducing emissions while maintaining economic competitiveness and driving real reductions over the long term.
- Providing regulatory certainty spurs innovation and leverages capital stock turnover to avoid the lock-in of long-lived high-emitting infrastructures.
- Two of Canada's largest-emitting sectors are already regulated:
  - Transportation
  - Coal-fired Electricity





# The transportation sector represents 25% of our emissions

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- A key priority for the Government's action on climate change
- GHG emission standards are in place for passenger automobiles and light-duty trucks (2011-2016 model years)
- Stringent GHG emissions standards are also in place for on-road heavy-duty vehicles (2014-2018 model years), such as vans, tractors and buses
- Intention to develop more stringent standards



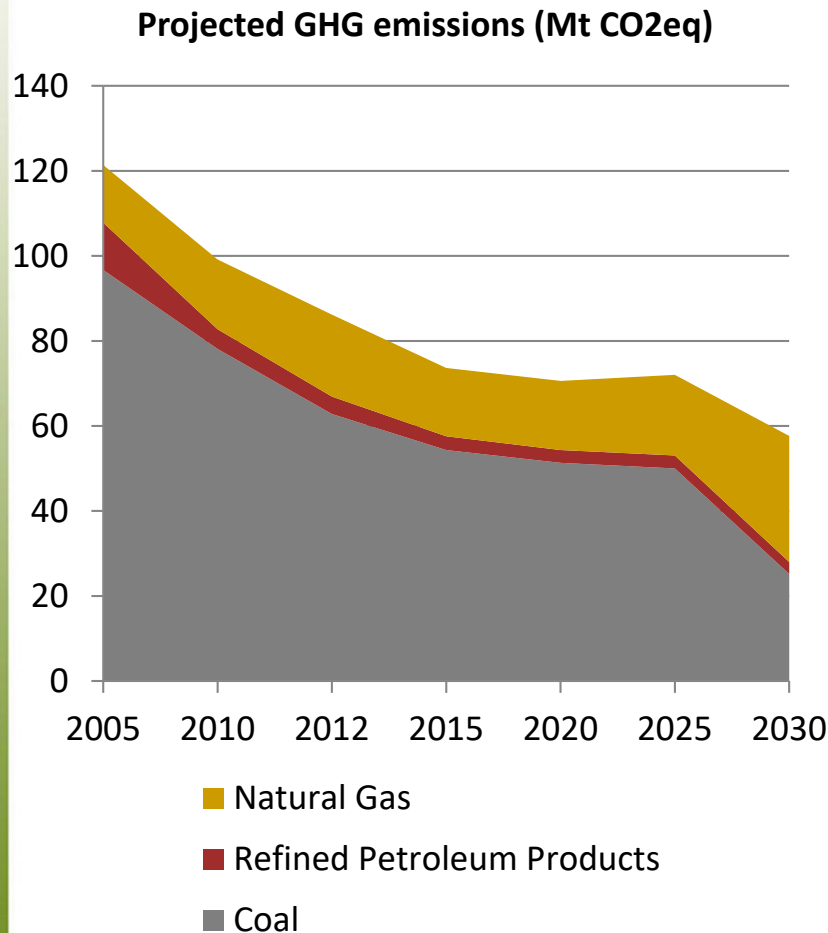
# Significant progress is being made in the electricity sector

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- Canada has one of the cleanest electricity systems in the world with almost 80% of the electricity supply emitting no GHGs.
- Federal and provincial measures phasing out traditional coal-fired electricity generation over the long-term:
  - Federal regulations will lead to the phase-out of existing coal-fired generation units without carbon capture and storage and effectively ban construction of traditional coal-fired generation units.
  - Ontario has now completed its phase out of coal-fired electricity generation.



# Electricity



**Drivers:** Emissions falling due to coal phase out, switch to natural gas and expected growth in non-emitting generation

Existing measures includes:

- Federal coal-fired electricity regulation
- Ontario coal phase-out
- Provincial renewable portfolio standards (NB, NS)
- Provincial feed-in tariffs (ON, PEI, NS)
- Provincial net metering programs (SK, MB, ON, QC, NB, NS, PEI)
- SK carbon capture and storage (e.g. Boundary Dam)
- NS electricity emissions cap
- Various federal and provincial energy efficiency programs



# Oil and gas sector measures

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- Canada is a net energy exporter, responding to global energy demand, and has the third largest global crude oil reserves in the world.
- Several measures are already in place.
  - Alberta Specified Gas Emitters regulation (from 2007)
- The Government of Canada is planning to proceed with regulations to address methane emissions from oil and gas.
- Significant technology investments have been made, including in carbon capture and storage.
- Canada will focus climate-related investments in innovative production technologies to continue to drive further improvements in environmental performance in the oil sands and other growing sectors.



# Canada is a world leader in CCS

Four large-scale projects are operating / under construction

1. Weyburn-Midale Project (2000)
2. SaskPower Boundary Dam  
(Operating since October 2014)
3. Quest Project  
(Expected launch in 2015)
4. Alberta Carbon Trunk Line  
(Expected operations by 2017)



Federal-Provincial investments in CCS RD&D of over \$1.8B with potentially up to \$4.5B in public-private investment in CCS initiatives



# Clean technology investments

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- Regulations under the *Energy Efficiency Act, 1992*, strengthen the minimum energy performance requirements for more than 40 consumer products to date.
- Federal investments in clean energy and technology - \$10 billion since 2006 to increase renewables, energy efficiency and innovation.
- In 2013, Canada was the second fastest growing clean energy market in the G-20.
- Since 2008, the Government of Canada has invested more than \$580 million for various research, development, and demonstration for CCS.



# Action by Provinces and Territories (PT)

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- PT mitigation efforts are significantly contributing to meeting the national target.
- PTs are implementing GHG reduction strategies that reflect their individual circumstances, including:
  - Regulations (Alberta and Saskatchewan)
  - Carbon pricing (British Columbia); and Cap and trade (Quebec)
  - Renewable power feed-in tariffs and Coal phase-out by end of 2014 (Ontario)
  - Absolute cap on emissions (Nova Scotia)
- Continued provincial and territorial efforts will make an important contribution in further reducing emissions:
  - New measures expected: Ontario recently announced it will implement a cap-and-trade program and several other provinces are currently reviewing their climate change plans
  - PT action is important as many policy levers rest with PTs



# Complementary International action

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- As an Arctic nation, addressing short-lived climate pollutants (SLCPs) is important to Canada.
- Canadian action on SLCPs:
  - Canada established a framework for action on Black Carbon and Methane during its Arctic Council Chairmanship.
  - Canada is a founder, lead partner and financial contributor and leads a number of initiatives of the Climate and Clean Air Coalition (CCAC).
  - Under the Montreal Protocol, Canada has partnered with the US and Mexico in promoting a proposal to phase down HFCs.





# Planned measures

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- Building on previous measures under the sector-by-sector regulatory approach, the Government of Canada has been moving forward on additional measures to address greenhouse gases:
  - In December 2014, the Government of Canada published a notice of its intent to regulate hydrofluorocarbons.
  - The Government has also announced its intention to regulate GHG emissions from post-2018 model-year on-road heavy-duty vehicles.
- Some GHG measures will also have air quality co-benefits.



# Planned measures - continued

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- As part of Canada's announcement on its Intended Nationally Determined Contribution (INDC), on May 15, 2015, the Government announced its intent to develop new regulations to address:
  - Methane emissions from the oil-and-gas sector;
  - GHG emissions from natural gas-fired electricity generation that build on existing regulations for coal-fired electricity; and
  - GHG emissions from the production of chemicals and fertilizers.



# *Thank you*

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(Photo credit: Environment Canada)



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