Treasury Board of Canada Secretariat | Secrétariat du Conseil du Trésor du Canada

Canada

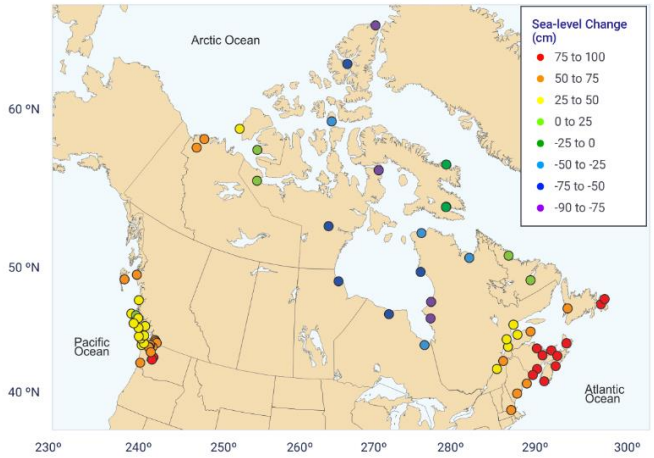
Greening Government Overview

Clean Air Partnership
January 28, 2021

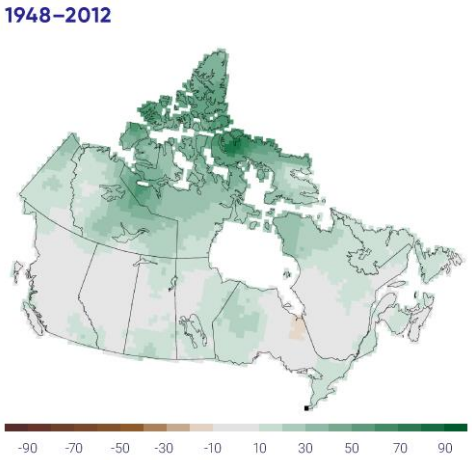
Nick Xenos
Executive Director
TBS - Centre for Greening Government (CGG)

www.canada.ca/greening-government
www.canada.ca/gouvernement-vert

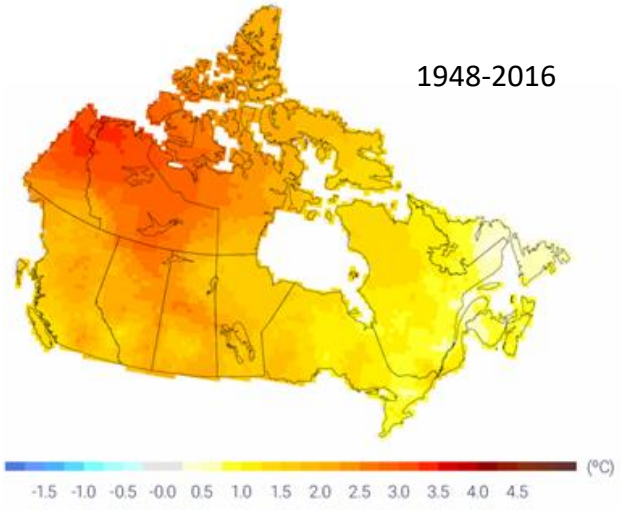
Climate Change Science in Canada



Sea-level rise prediction



Annual precipitation change



Annual temp change

- Canada has warmed by **1.7°C** between 1948 and 2016, about 2 times the global average
- Northern Canada has warmed by **2.3°C**, about 3 times the global average
- Across Canada we are experiencing more extreme heat, less snow and sea ice cover, thinning glaciers, thawing permafrost, warming and acidifying oceans

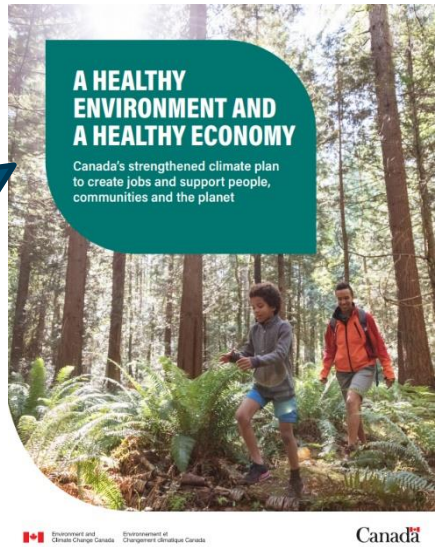
➢ ***Much of our knowledge of climate change in Canada is a direct result of the great work of federal scientists using federal labs***

Policy context - Federal climate change commitments

PARIS2015
UN CLIMATE CHANGE CONFERENCE
COP21·CMP11

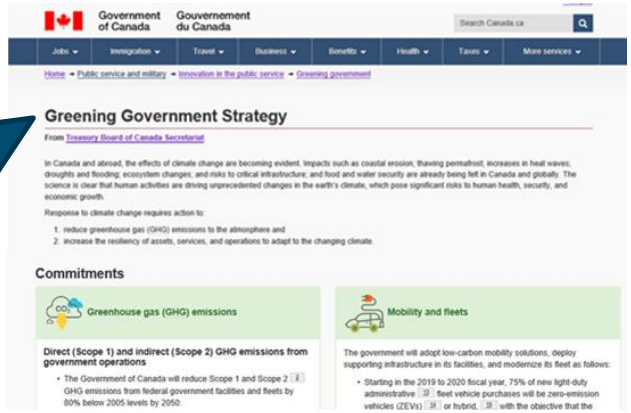
Keep the global temperature increase to well below 2 degrees Celsius

2020: Canada's enhanced climate plan targets net zero carbon by 2050 and includes greening government commitments



FSDS: Reduce GHG emissions from Federal operations

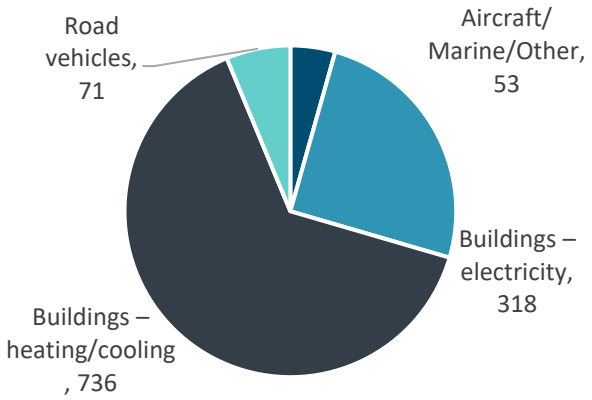
2020: Updated Greening Government Strategy
Net zero emissions by 2050 for govt operations



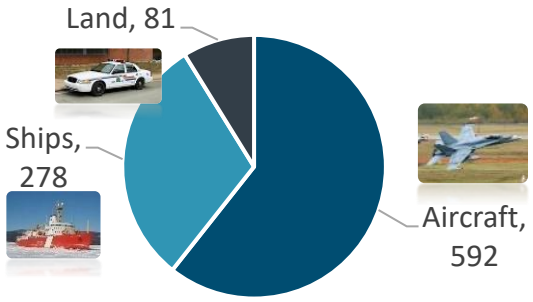
2018: Updated Policy on Green Procurement

Sources of all Federal Emissions – 2019-20

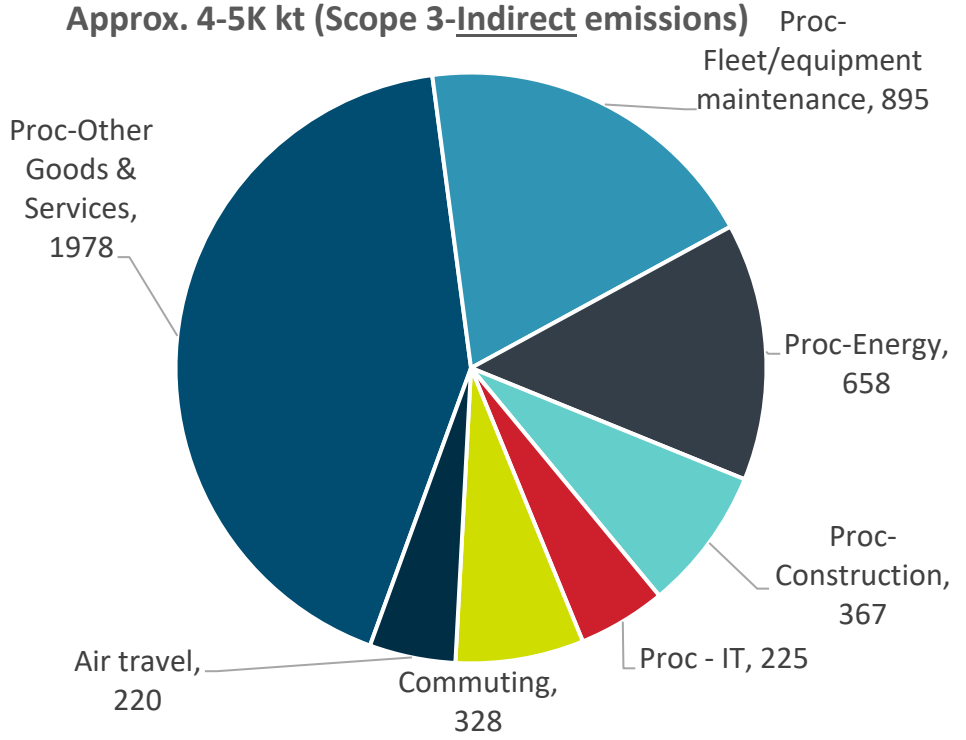
Buildings and Conventional Fleet
1,177 kt (Scope 1-2)



National Safety and Security Fleet
951 kt (Scope 1)



Procurement/Air Travel/Commuting
Approx. 4-5K kt (Scope 3-Indirect emissions)

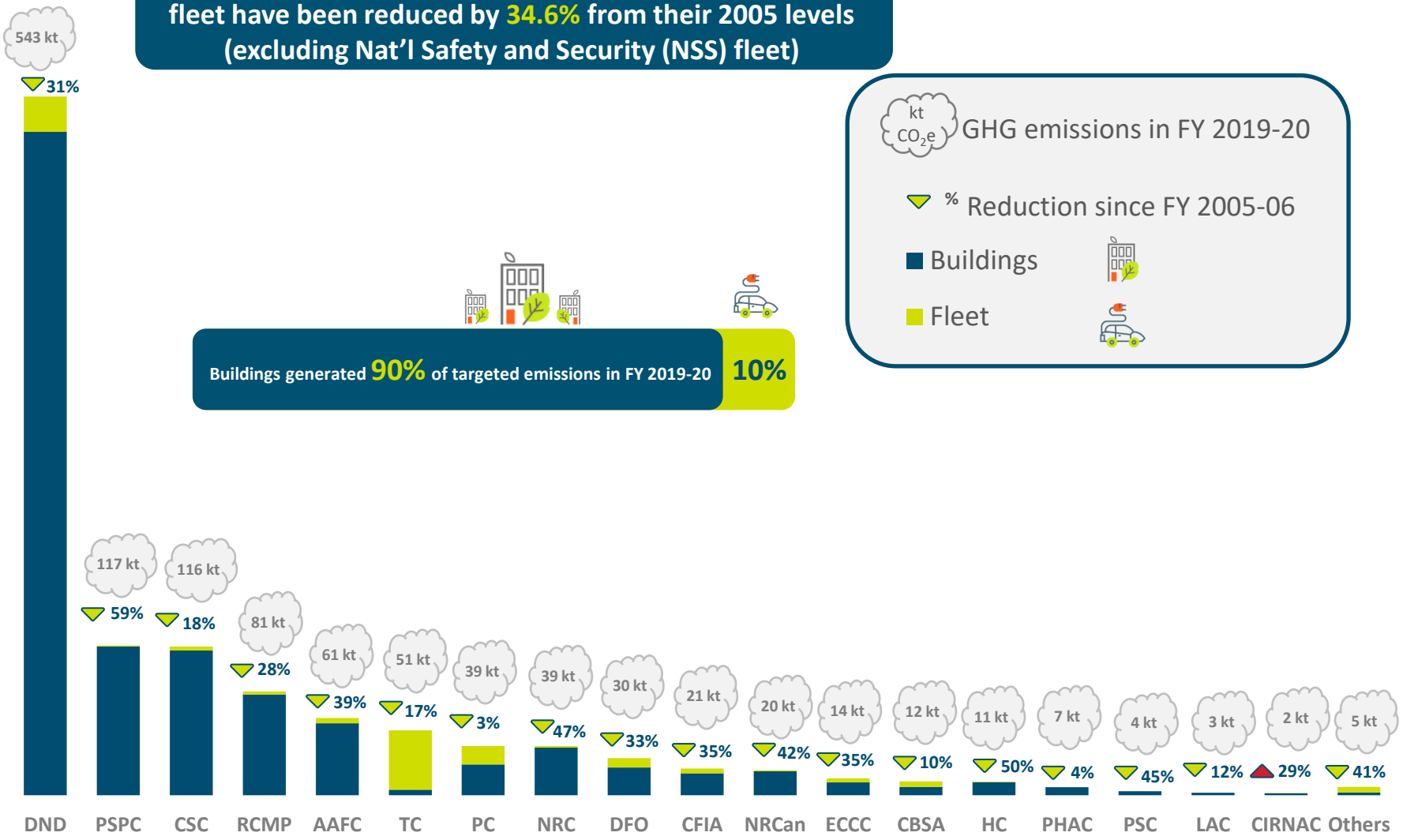


Other sources of emissions:
- **Crown corps:** Canada Post-141 kt; Via-137kt; CBC/SRC-38kt
- **Missions abroad** (TBD)
- **Domestic Office Leases** (approx. 130 kt)
- **Fugitive gases** (TBD)
- **Emissions from decentralized procurement** (TBD)

Note: All numbers in kilotonnes (kt) of carbon dioxide equivalent

Building & vehicle fleet emissions and progress by organization

Emissions from Government buildings and conventional fleet have been reduced by 34.6% from their 2005 levels (excluding Nat'l Safety and Security (NSS) fleet)



**Note: The government owns over 38,000 buildings, over 30,000 vehicles and procures approx. $18B/year*

Greening Government Strategy (GGS) overview

Objective:

- **40% reduction of real property and conventional fleet emissions by 2025**
- **Net-zero emissions by 2050**
- **Overall green & climate resilient government operations**

In-line with:

PARIS2015 UN CLIMATE CHANGE CONFERENCE COP21·CMP11

Strategy (GGS) developed to get there:

ALIGN POLICIES, ENGAGE PARTNERS

REAL PROPERTY	MOBILITY and FLEET	PROCUREMENT and CLEAN TECHNOLOGIES	CLIMATE RESILIENT OPERATIONS
			

MEASURE PERFORMANCE

Implementation:

- **TBS providing direction, guidance, Greening Government Fund**
- **Expert depts. providing support (TBS/NRCan/PSPC/NRC/ECCC)**
- **DEPARTMENTS TAKING ACTION**

Performance: **34.6% reduction in GHG emissions to date (buildings and conventional fleet)**

Real property, fleet, adaptation and procurement commitments

Require new builds and major retrofits to be net-zero carbon

- 100% clean electricity by 2022 where possible, latest by 2025
- Divert 75% of operational waste, including plastic waste, by 2030
- Incorporate climate-resilient design
- Use life-cycle cost analysis (carbon shadow price of $300/tonne)
- Reduce embodied carbon in structural materials by 30% starting in 2025

Targets for zero-emission vehicles (ZEVs) and hybrids

- 75% of unmodified light-duty vehicle purchases must be ZEVs or hybrids, moving to 80% ZEVs by 2030

Adaptation to climate change

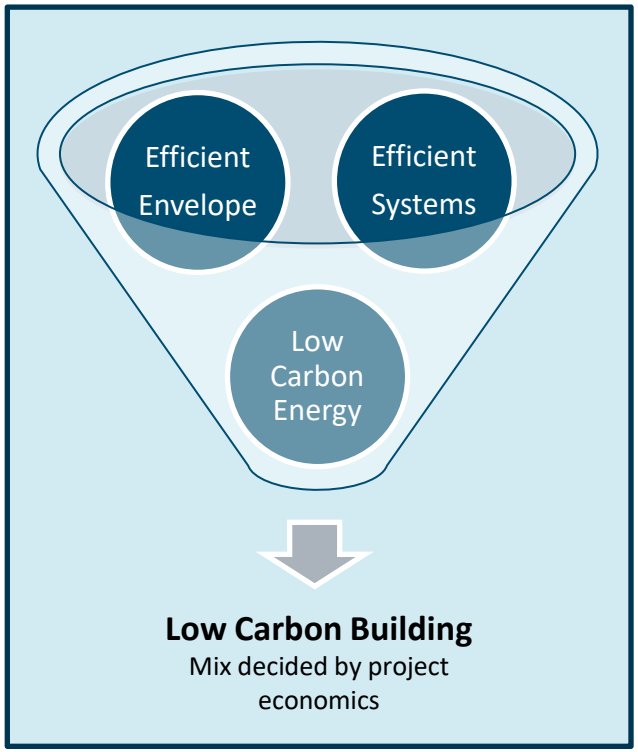
- By 2021, understand the impacts that affect federal assets, services and operations
- By 2022, develop measures to reduce risks to assets, services and operations

Green procurement and adoption of clean technologies

- Net-zero emissions from procurement of goods and services by 2050
- Include criteria to reduce emissions, sustainable plastics and broader environmental benefits into procurements that have a high environmental impact
- Incent major suppliers to adopt a science-based climate target and disclose emissions
- Eliminate the unnecessary use of single-use plastics in government operations

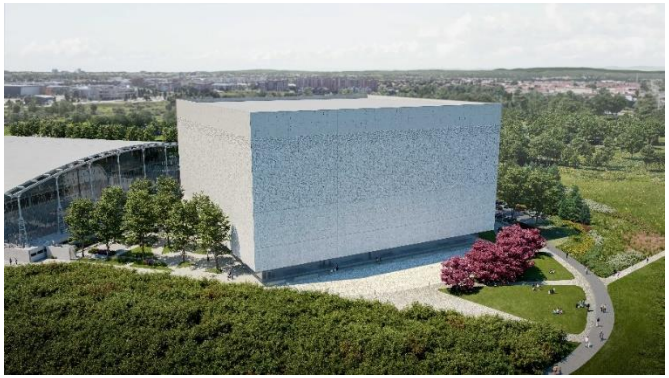
Net Zero Carbon buildings

Zero Carbon buildings are feasible now, GC is working towards a low-carbon portfolio



The GC portfolio has 166 net zero carbon buildings, and 31 more are net zero carbon ready

Library and Archives Gatineau 2 Preservation Centre – UNDER CONSTRUCTION (Gatineau, QC)



2575 blvd Sainte-Anne – COMPLETED (Québec City, QC)

Place du Portage III – IN PLANNING (Gatineau, QC)

Low Incremental Cost avoids High Future Liability

- Better understanding of costs, and integrated design approaches

Existing Buildings

PSPC Arthur Meighen retrofit, Toronto
- -88% GHG emissions
- -4% incremental lifecycle cost (over 25 years)

New Construction

Mohawk College's Office-Lab, Hamilton – **<u>Zero</u> Incremental Cost**

Canadian Green Building Council (CaGBC) 2019 Study

THE BUSINESS CASE FOR ZERO CARBON BUILDINGS

NATIONAL RESULTS

Incremental Life-cycle Return $27/m² | $34/tCO$_2$e	1%	Annual Operating Savings $17/m²	24%
Incremental Capital Costs $253/m²	8%	Emission Savings from Onsite Measures 31 kgCO$_2$e/m²/yr	91%*

Geographical	Vancouver	Calgary	Toronto	Ottawa	Montreal	Halifax	Incremental Life-cycle Return	Mid-Rise Office	Low-Rise Office	Mid-Rise MURB	Low-Rise MURB	Primary School	Warehouse	Big-Box Retail	Archetype
	-1%	1%	1%	1%	0%	4%	% vs Baseline	3%	3%	0%	-1%	-1%	2%	1%	
	-55	32	58	51	-4	187	$/m²	107	120	20	-51	-45	42	37	
	-137	18	110	79	-6	122	$/tCO$_2$e	208	-166	27	-63	-44	64	34	

Greening Government Fund

PURPOSE

To provide funding for departments to explore and share innovative approaches to reducing greenhouse gas (GHG) emissions (Scope 1, 2 and 3) in federal operations. Project funding comes from departments and agencies that generate more than 1 kilotonne of GHGs per year from air travel.

OBJECTIVE

To support and share the results of projects which:

- will result in GHG emission reductions;
- test or implement innovative approaches with a potential for learning;
- have a high potential for replicability; and
- pursue emissions solutions in difficult-to-reduce areas

- Parks Canada: Kluane Solar
  Amount: $240,000 over 2 years

Examples of 2018-2019 Approved Projects

- National Research Council Canada: Low-Carbon Assets Through Life-Cycle Assessment
  Amount: $4 million over 4 years
- National Defence: Navy Ship Platform Exploitation of Energy Data (SPEED)
  Amount: $1,570,000 over 4 years

EXAMPLES OF GREENING GOVERNMENT RESULTS

REAL PROPERTY

Reducing emissions from real property by buying clean electricity, implementing energy efficiency projects and deploying Energy Managers at bases across Canada

90% of the government's total electricity use comes from clean sources

MOBILITY and FLEET

In 2020, **teleconferencing time** increased from 1.6 million minutes/day to over 5 million minutes/day, supporting collaboration from remote locations.

Bought **287 hybrid and zero-emission vehicles** in 2019-20 to reduce emissions from light-duty fleet

PROCUREMENT and CLEAN TECHNOLOGIES

Major suppliers are being encouraged to disclose their GHG emissions and set Paris-based emissions reduction targets.

CLIMATE RESILIENT SERVICES AND OPERATIONS

Took action to begin to understand **climate impacts and risks** on federal operations, including new and renewed departmental assessments

CROSS-CUTTING RESULTS

Greenhouse gas emissions reduction of **34.6%** for buildings and light-duty fleet compared to 2005-06 baseline

Committed to the principles of **transparency and open data** through annual publishing of the GoC environmental footprint

The **Greening Government Fund** has supported 27 projects that reduce GHG emissions