



Environment
Canada

Environnement
Canada



National Inventory Report

1990–2012

GREENHOUSE GAS SOURCES
AND SINKS IN CANADA

The Canadian Government's Submission
to the UN Framework Convention on Climate Change

Part 3



Canada 

Library and Archives Canada Cataloguing in Publication

Canada

Main entry under title:

National Inventory Report 1990–2012: Greenhouse Gas Sources and Sinks in Canada

Annual

1990/2012

Issued by the Pollutant Inventories and Reporting Division

Other editions available: Rapport d'inventaire national 1990–2012 : Sources et puits de gaz à effet de serre au Canada

Continues: Canada's Greenhouse Gas Inventory.

This document is available on Environment Canada's web site at <http://www.ec.gc.ca/ges-ghg/>

ISSN: 1910-7064

1. Greenhouse gases—Canada—Measurement—Periodicals
 2. Methane—Environmental aspects—Canada—Periodicals
 3. Nitrous oxide—Environmental aspects—Canada—Periodicals
 4. Carbon dioxide—Environmental aspects—Canada—Periodicals
 5. Pollution—Canada—Measurement—Periodicals
- I. Canada. Environment Canada.
 - II. Pollutant Inventories and Reporting Division.
 - III. Title.
 - IV. Title: Greenhouse gas sources and sinks in Canada.

Unless otherwise specified, you may not reproduce materials in this publication, in whole or in part, for the purposes of commercial redistribution without prior written permission from Environment Canada's copyright administrator. To obtain permission to reproduce Government of Canada materials for commercial purposes, apply for Crown Copyright Clearance by contacting:

Environment Canada
Inquiry Centre
10 Wellington Street, 23rd Floor
Gatineau QC K1A 0H3
Telephone: 819-997-2800
Toll Free: 1-800-668-6767 (in Canada only)
Fax: 819-994-1412
TTY: 819-994-0736
Email: enviroinfo@ec.gc.ca

Cover photo: © Photos.com – 2014

© Her Majesty the Queen in Right of Canada, represented by the Minister of the Environment, 2014

Aussi disponible en français

List of Acronyms, Abbreviations and Units

AAC	Aluminum Association of Canada
AAFC	Agriculture and Agri-Food Canada
AC	air conditioning
AER	Alberta Energy Regulator
AGEM	Aviation Greenhouse Gas Emission Model
AIA	Association de l'industrie d'aluminium du Québec
Al	aluminium
Al ₂ O ₃	alumina
API	American Petroleum Institute
ASH	manure ash content
Asha	Ash content in baked anodes
Ashp	Ash content in pitch
ATV	all-terrain vehicle
AWMS	animal waste management system
BADA	Base of Aircraft Data
B ₀	maximum methane production potential
BC	average binder content in paste
BOF	basic oxygen furnace
BOD ₅	five-day biochemical oxygen demand
BSM	emissions of benzene-soluble matter
C	carbon
CAC	Criteria Air Contaminant
CaC ₂	calcium carbide
CaCO ₃	calcium carbonate; limestone
CaMg(CO ₃) ₂	dolomite (also CaCO ₃ •MgCO ₃)
CanFI	Canada's National Forest Inventory
CANSIM	Statistics Canada's key socioeconomic database
CanSIS	Canadian Soil Information System
CanWEA	Canadian Wind Energy Association
CaO	lime; quicklime; calcined limestone
CAPP	Canadian Association of Petroleum Producers
CBM	Carbon Budget Model
CBM-CFS3	Carbon Budget Model for the Canadian Forest Sector, version 3
CC	baked anode consumption per tonne of aluminium
CEA	Canadian Electricity AssociationCEPA 1999 <i>Canadian Environmental Protection Act, 1999</i>
CESI	Canadian Environmental Sustainability Indicators
CF ₄	carbon tetrafluoride
C ₂ F ₆	carbon hexafluoride
CFC	chlorofluorocarbon
CFS	Canadian Forest Service
CGA	Canadian Gas Association
CH ₃ OH	methanol
CH ₄	methane
C ₂ H ₆	ethane
C ₃ H ₈	propane
C ₄ H ₁₀	butane
C ₂ H ₄	ethylene
C ₆ H ₆	benzene

CHCL ₃	chloroform
CIEEDAC	Canadian Industrial Energy End-Use Data Analysis Centre
CKD	cement kiln dust
CLRTAP	Convention on Long-range Transboundary Air Pollution
CO	carbon monoxide
CO ₂	carbon dioxide
CO ₂ eq	carbon dioxide equivalent
COD	chemical oxygen demand
CORINAIR	Core Inventory of Air Emissions in Europe
CPPI	Canadian Petroleum Products Institute
CRF	Common Reporting Format
CSPA	Canadian Steel Producers Association
CTS	crop and tillage system
CVS	Canadian Vehicle Survey
DE	digestible energy
DM	dry matter
DMI	dry matter intake
DOC	degradable organic carbon
DOCF	degradable organic carbon dissimilated
DOM	dead organic matter
EAF	electric arc furnace
EC	Environment Canada
EDC	ethylene dichloride
EF	emission factor
EF _{BASE}	basic emission factor
EMEP	European Monitoring and Evaluation Programme
EPA	Environmental Protection Agency (United States)
EPGTD	Electric Power Generation, Transmission and Distribution
eq	equivalent
ERCB	Energy Resources Conservation Board
ERT	Expert Review Team
EU	European Union
FAA	Federal Aviation Administration (United States)
FAACS	Feasibility Assessment of Afforestation for Carbon Sequestration
FCR	fuel consumption ratio
FGD	flue gas desulphurization
FLCL	forest land converted to cropland
FLWL	forest land converted to wetland
FOI	Swedish Defence Research Agency
FTILL	tillage ratio factor
GCD	great-circle distance
GCV	gross calorific value
GDP	gross domestic product
GE	gross energy
GHG	greenhouse gas
GHGRP	Greenhouse Gas Reporting Program
GIS	geographic information system
Gt	gigatonne
GRI	Gas Research Institute
GTIS	Global Trade Information Services
GVWR	gross vehicle weight rating

GWP	global warming potential
H ₂	hydrogen
H ₂ O	water
H ₂ S	hydrogen sulphide
HCFC	hydrochlorofluorocarbon
HCl	hydrochloric acid
HDD	heating degree-day
HDDV	heavy-duty diesel vehicle
HDGV	heavy-duty gasoline vehicle
HE	harvest emissions
HF	hydrogen fluoride
HFC	hydrofluorocarbon
HHV	higher heating value
HNO ₃	nitric acid
HQ	Hydro-Québec
HRAI	Heating, Refrigeration and Air Conditioning Institute of Canada
HSS	horizontal stud Søderberg
HWP	harvested wood product
HWP-C	carbon stored in harvested wood products
IAI	International Aluminium Institute
ICAO	International Civil Aviation Organization
IE	included elsewhere
IEA	International Energy Agency
IESO	Independent Electricity System Operator
I/M	inspection and maintenance
Impa	fluorine and other impurities
IPCC	Intergovernmental Panel on Climate Change
IT	intensive tillage
KAR	kilometre accumulation rate
K ₂ CO ₃	potassium carbonate
kg	kilogram
kha	kilohectare
kt	kilotonne
kWh	kilowatt-hour
L ₀	methane generation potential
LDDT	light-duty diesel truck
LDDV	light-duty diesel vehicle
LDGT	light-duty gasoline truck
LDGV	light-duty gasoline vehicle
LFG	landfill gas
LHV	lower heating value
LMC	land management change
LPG	liquefied petroleum gas
LTO	landing and takeoff
LULUCF	Land Use, Land-use Change and Forestry
m	metre
MARS	Monitoring, Accounting and Reporting System
MC	motorcycle
MCF	methane conversion factor (Agriculture)
MCF	methane correction factor (Waste)
Mg	magnesium; also megagram

MgCO ₃	magnesite; magnesium carbonate
MGEM	Mobile Greenhouse Gas Emission Model
MgO	magnesia; dolomitic lime
Mha	megahectare, equivalent to a million hectares
MMIC	Motorcycle & Moped Industry Council
MODTF	Modeling and Database Task Force
mol	mole
MP	total aluminum production
MS	manure system distribution factor
MSW	municipal solid waste
Mt	megatonne
MTOW	maximum takeoff weight
MW	megawatt
N	nitrogen
N ₂	nitrogen gas
Na ₂ CO ₃	sodium carbonate; soda ash
Na ₃ AlF ₆	cryolite
NA	not applicable
N/A	not available
NAICS	North American Industry Classification System
NCASI	National Council for Air and Stream Improvement
NCV	net calorific value
NE	not estimated
NEB	National Energy Board
NEU	non-energy use
NFR	nomenclature for reporting
NGL	natural gas liquid
NH ₃	ammonia
NH ₄ ⁺	ammonium
NH ₄ NO ₃	ammonium nitrate
NIR	National Inventory Report
NMVOC	non-methane volatile organic compound
N ₂ O	nitrous oxide
NO	nitric oxide; also used for not occurring
NO ₂	nitrogen dioxide
NO ₃	nitrate
NO _x	nitrogen oxides
NOC	Nitrous Oxide of Canada
NPRI	National Pollutant Release Inventory
NRCan	Natural Resources Canada
NSCR	non-selective catalytic reduction
NT	no tillage
O ₂	oxygen
ODS	ozone-depleting substance
OECD	Organisation for Economic Co-operation and Development
OEM	original equipment manufacturer
OS/HOU	oil sands and heavy oil upgrading
PC	paste consumption
PFC	perfluorocarbon
PJ	petajoule
POP	persistent organic pollutant

P/PE	precipitation/potential evapotranspiration
PTRC	Petroleum Technology Research Centre
QA	quality assurance
QC	quality control
RA	reference approach
RESD	<i>Report on Energy Supply and Demand in Canada</i>
RPP	refined petroleum product
RT	reduced tillage
RTI	Research Triangle Institute
SA	sectoral approach
Sa	sulphur content in baked anodes
SAGE	System for assessing Aviation's Global Emissions
SBR	styrene-butadiene
Sc	sulphur content in calcinated coke
SCR	selective catalytic reduction
SF ₆	sulphur hexafluoride
SIC	Standard Industrial Classification
SiC	silicon carbide
SLC	Soil Landscapes of Canada
SMR	steam methane reforming
SO ₂	sulphur dioxide
SO _x	sulphur oxides
SOC	soil organic carbon
Sp	sulphur content in pitch
SUV	sport utility vehicle
t	tonne
TWh	terrawatt-hour
UNECE	United Nations Economic Commission for Europe
UNFCCC	United Nations Framework Convention on Climate Change
UPCIS	Use Patterns and Controls Implementation Section
UOG	upstream oil and gas
VCM	vinyl chloride monomer
VKT	vehicle kilometres travelled
VSS	vertical stud Søderberg
VS	volatile solids
WMO	World Meteorological Organization

Table of Contents

Annex 11	Provincial/Territorial Greenhouse Gas Emission Tables, 1990–2012	13
Annex 12	Canada’s Greenhouse Gas Emission Tables, 1990–2012.....	42
Annex 13	Electricity in Canada: Summary and Intensity Tables	68
References.....		82

List of Tables

Table A11-1	GHG Category Description	14
Table A11-2	1990-2012 GHG Emission Summary for Newfoundland and Labrador	15
Table A11-3	2012 GHG Emission Summary for Newfoundland and Labrador	16
Table A11-4	1990-2012 GHG Emission Summary for Prince Edward Island	17
Table A11-5	2012 GHG Emission Summary for Prince Edward Island	18
Table A11-6	1990-2012 GHG Emission Summary for Nova Scotia	19
Table A11-7	2012 GHG Emission Summary for Nova Scotia	20
Table A11-8	1990-2012 GHG Emission Summary for New Brunswick	21
Table A11-9	2012 GHG Emission Summary for New Brunswick	22
Table A11-10	1990-2012 GHG Emission Summary for Quebec	23
Table A11-11	2012 GHG Emission Summary for Quebec	24
Table A11-12	1990-2012 GHG Emission Summary for Ontario	25
Table A11-13	2012 GHG Emission Summary for Ontario	26
Table A11-14	1990-2012 GHG Emission Summary for Manitoba	27
Table A11-15	2012 GHG Emission Summary for Manitoba	28
Table A11-16	1990-2012 GHG Emission Summary for Saskatchewan	29
Table A11-17	2012 GHG Emission Summary for Saskatchewan	30
Table A11-18	1990-2012 GHG Emission Summary for Alberta	31
Table A11-19	2012 GHG Emission Summary for Alberta	32
Table A11-20	1990-2012 GHG Emission Summary for British Columbia	33
Table A11-21	2012 GHG Emission Summary for British Columbia	34
Table A11-22	1990-2012 GHG Emission Summary for Yukon	35
Table A11-23	2012 GHG Emission Summary for Yukon	36
Table A11-24	1999-2012 GHG Emission Summary for Northwest Territories	37
Table A11-25	2012 GHG Emission Summary for Northwest Territories	38
Table A11-26	1999-2012 GHG Emission Summary for Nunavut	39
Table A11-27	2012 GHG Emission Summary for Nunavut	40
Table A11-28	1990-1998 GHG Emission Summary for Northwest Territories and Nunavut	41
Table A12-1	GHG Source/Sink Category Description	43
Table A12-2	Canada's 1990–2012 GHG Emissions by Sector	44
Table A12-3	2012 GHG Emission Summary for Canada	45
Table A12-4	2011 GHG Emission Summary for Canada	46
Table A12-5	2010 GHG Emission Summary for Canada	47
Table A12-6	2009 GHG Emission Summary for Canada	48
Table A12-7	2008 GHG Emission Summary for Canada	49
Table A12-8	2007 GHG Emission Summary for Canada	50
Table A12-9	2006 GHG Emission Summary for Canada	51
Table A12-10	2005 GHG Emission Summary for Canada	52
Table A12-11	2004 GHG Emission Summary for Canada	53
Table A12-12	2003 GHG Emission Summary for Canada	54
Table A12-13	2002 GHG Emission Summary for Canada	55
Table A12-14	2001 GHG Emission Summary for Canada	56
Table A12-15	2000 GHG Emission Summary for Canada	57
Table A12-16	1999 GHG Emission Summary for Canada	58

Table A12-17	1998 GHG Emission Summary for Canada	59
Table A12-18	1997 GHG Emission Summary for Canada	60
Table A12-19	1996 GHG Emission Summary for Canada	61
Table A12-20	1995 GHG Emission Summary for Canada	62
Table A12-21	1994 GHG Emission Summary for Canada	63
Table A12-22	1993 GHG Emission Summary for Canada	64
Table A12-23	1992 GHG Emission Summary for Canada	65
Table A12-24	1991 GHG Emission Summary for Canada	66
Table A12-25	1990 GHG Emission Summary for Canada	67
Table A13-1	Electricity Generation and GHG Emission Details for Canada	69
Table A13-2	Electricity Generation and GHG Emission Details for Newfoundland and Labrador	70
Table A13-3	Electricity Generation and GHG Emission Details for Prince Edward Island	71
Table A13-4	Electricity Generation and GHG Emission Details for Nova Scotia	72
Table A13-5	Electricity Generation and GHG Emission Details for New Brunswick	73
Table A13-6	Electricity Generation and GHG Emission Details for Quebec	74
Table A13-7	Electricity Generation and GHG Emission Details for Ontario	75
Table A13-8	Electricity Generation and GHG Emission Details for Manitoba	76
Table A13-9	Electricity Generation and GHG Emission Details for Saskatchewan	77
Table A13-10	Electricity Generation and GHG Emission Details for Alberta	78
Table A13-11	Electricity Generation and GHG Emission Details for British Columbia	79
Table A13-12	Electricity Generation and GHG Emission Details for Yukon	80
Table A13-13	Electricity Generation and GHG Emission Details for the Northwest Territories and Nunavut	81

Annex 11

Provincial/Territorial Greenhouse Gas Emission Tables, 1990–2012

Summary tables illustrating GHG emissions (for GHG categories, see Table A11–1) by province/territory, sector, and year are included in this annex (Table A11–1 to Table A11–28). To account for the creation of Nunavut in 1999, a time series from 1999–2012 is provided for both Nunavut and the Northwest Territories (Table A11–24 and Table A11–26) and the years 1990–1998 are presented as a combined region in Table A11–28.

Although the UNFCCC reporting guidelines require that only national-level detail be reported, provincial- and territorial-level detail is important, owing to the regional differences in emission levels and trends. Note that provincial and territorial emission estimates may not necessarily sum to the national totals due to rounding and suppression of confidential data. For example, provincial and territorial emission totals do not include consumption of PFCs and SF₆ (e.g., refrigeration, air conditioning and semiconductor manufacturing).

The reader should also note that many provinces develop independent inventories of provincial GHG emissions, in some cases making use of alternate methodologies, data inputs and/or inclusions/omissions of GHG source categories. While Canada is developing a national emissions inventory consistent with IPCC guidelines and international obligations, provincial governments may elect to develop an inventory structure in accordance with specific provincial needs. Environment Canada encourages collaboration with provinces for quality assurance and continuous improvement of this annual National Inventory Report. The Department is striving to ensure consistency between different estimates, as some provincial GHG estimates presented in this report used to develop the national estimates may differ from those developed by provincial governments.

Table A11–1 GHG Category Description

GHG Source/Sink Categories	
ENERGY	
a.	Stationary Combustion Sources
	Electricity and Heat Generation Electricity Generation Heat Generation
	Emissions from fuel consumed by: - Utility electricity generation - Steam generation (for sale)
	Fossil Fuel Production and Refining Petroleum Refining Fossil Fuel Production
	Emissions from fuel consumed by: Petroleum refining and oil sands upgrading industries Natural gas production and some conventional and unconventional oil production industries (some refining is included)
	Mining & Oil and Gas Extraction
	Emissions from commercial fuel sold to: - Metal and non-metal mines, stone quarries, and gravel pits - Oil and gas extraction industries - Mineral exploration and contract drilling operations
	Manufacturing Industries
	Emissions from fuel consumed by the following industries: - Iron and Steel (steel foundries, casting and rolling mills) - Non-ferrous metals (aluminium, magnesium and other production) - Chemical (fertilizer manufacturing, organic and inorganic chemical manufacturing) - Pulp and Paper (primarily pulp, paper, and paper product manufacturers) - Cement production - Other manufacturing industries not listed (such as automobile manufacturing, textiles, food and beverage industries)
	Construction
	Emissions from fuels consumed by the construction industry - buildings, highways etc.
	Commercial & Institutional
	Emissions from fuel consumed by: - Service industries related to mining, communication, wholesale and retail trade, finance and insurance, real estate, education, etc.) - Federal, provincial and municipal establishments - National Defence and Canadian Coast Guard - Train stations, airports and warehouses
	Residential
	Emissions from fuel consumed for personal residences (homes, apartment hotels, condominiums and farm houses)
	Agriculture & Forestry
	Emissions from fuel consumed by: - Forestry and logging service industry - Agricultural, hunting and trapping industry (excluding food processing, farm machinery manufacturing, and repair)
b.	Transportation
	Emissions resulting from the: - Consumption of fossil fuels by airlines flying domestically with Canadian purchased fuel - Consumption of fossil fuels (including non-CO ₂ emissions from ethanol and biodiesel) by vehicles licensed to operate on roads - Consumption of fossil fuels by Canadian railways - Consumption of fossil fuels by Canadian registered marine vessels fuelled domestically - Consumption of fossil fuels (including non-CO ₂ emissions from ethanol and biodiesel) by combustion devices not licensed to operate on roads - Transportation and distribution of crude oil, natural gas and other products
	Railways
	Domestic Marine
	Others - Off Road
	Others - Pipelines
c.	Fugitive Sources
	Coal Mining
	Oil and Natural Gas
	Intentional and unintentional releases of greenhouse gases from the following activities: Underground and surface mining Conventional and unconventional oil and gas exploration, production, transportation, and distribution
INDUSTRIAL PROCESSES	
a.	Mineral Products
	Emissions resulting from the following process activities: - Production of cement and lime; use of soda ash, limestone & dolomite, and magnesite
b.	Chemical Industry
	- Production of ammonia, nitric acid, adipic acid, carbide, carbon black, ethylene dichloride, ethylene, methanol and styrene
c.	Metal Production
	- Production of aluminum, iron and steel, magnesium production and casting
d.	Production and Consumption of Halocarbons and SF ₆
	- Production of HCFC-22; use of HFCs and/or PFCs in air conditioning units, refrigeration units, fire extinguishers, aerosol cans, solvents, foam blowing, semiconductor manufacturing and electronics industry; use of SF ₆ in electrical equipment and semiconductors
e.	Other & Undifferentiated Production
	Non-energy use of fossil fuels mostly in chemical/petrochemical activities
SOLVENT & OTHER PRODUCT USE	
	Emissions resulting from the use of N ₂ O as an anaesthetic and propellant
AGRICULTURE	
	Emissions resulting from:
a.	Enteric Fermentation
	Emissions resulting from the eructation of CH ₄ during the digestion of plant material by (mainly) ruminants
b.	Manure Management
	Emissions resulting from the release of CH ₄ and N ₂ O due to microbial activity during the storage of feces, urine and bedding materials from the cleaning of barns and pens
c.	Agricultural Soils
	Direct sources
	Direct N ₂ O emissions from synthetic fertilizer, manure on cropland, crop residue, tillage, summerfallow, irrigation and cultivation of organic soils
	Manure on Pasture, Range, and Paddock
	Direct N ₂ O emissions from manure deposited on pasture, range and paddock
	Indirect Sources
	Indirect N ₂ O emissions from volatilization and leaching of animal manure nitrogen, synthetic fertilizer nitrogen and crop residue nitrogen
d.	Field Burning of Agricultural Residues
	CH ₄ and N ₂ O emissions from crop residue burning
WASTE	
	Emissions resulting from:
a.	Solid Waste Disposal on Land
	Municipal solid waste management sites (landfills) and dedicated wood waste landfills
b.	Wastewater Handling
	Domestic and industrial wastewater treatment
c.	Waste Incineration
	Municipal solid waste and sewage sludge incineration

Table A11-2 1990-2012 GHG Emission Summary for Newfoundland and Labrador

Greenhouse Gas Categories		1990	2000	2005	2008	2009	2010	2011	2012
<i>kt CO₂ equivalent</i>									
TOTAL		9 240	8 750	9 860	9 910	9 680	9 280	9 310	8 740
ENERGY		8 510	7 980	9 000	9 090	8 810	8 450	8 450	7 750
a.	Stationary Combustion Sources	5 380	4 360	4 670	4 630	4 530	4 000	3 960	3 500
	Electricity and Heat Generation	1 630	815	856	898	821	739	857	843
	Fossil Fuel Production and Refining	1 000	1 500	1 700	1 800	2 100	2 000	1 800	1 600
	Mining & Oil and Gas Extraction	1 060	871	1 050	861	829	442	360	353
	Manufacturing Industries	501	243	276	152	87.1	76	78.6	85
	Construction	32.7	10.4	23.4	22.2	8.63	11.1	14.8	9.18
	Commercial & Institutional	317	308	353	279	197	255	259	200
	Residential	795	531	413	600	496	462	530	428
	Agriculture & Forestry	24.3	46.5	8.03	9.06	8.09	11.4	17.4	11.1
b.	Transport ¹	3 090	3 320	3 490	3 710	3 710	3 910	4 040	3 770
	Civil Aviation (Domestic Aviation)	190	190	210	200	180	190	180	190
	Road Transportation	1 640	1 760	1 900	2 130	2 050	2 120	2 170	2 280
	Light-Duty Gasoline Vehicles	753	631	595	662	641	646	660	717
	Light-Duty Gasoline Trucks	429	646	751	838	814	822	843	917
	Heavy-Duty Gasoline Vehicles	107	45.6	53.6	62	61	62.3	64.5	70.9
	Motorcycles	5.12	3.63	4.07	4.7	4.62	4.72	4.88	5.36
	Light-Duty Diesel Vehicles	2.29	1.31	1.55	1.85	1.92	2.04	2.31	2.63
	Light-Duty Diesel Trucks	5.54	14.1	19.1	20.9	20.2	20.4	22.1	24
	Heavy-Duty Diesel Vehicles	335	418	476	536	507	560	577	544
	Propane & Natural Gas Vehicles	1.4	0.92	0.31	0.61	0.46	0.46	0.46	0.46
	Railways	-	-	-	30	-	1.5	-	-
	Navigation (Domestic Marine)	700	680	590	480	750	850	590	410
	Other Transportation	560	690	800	870	730	750	1 100	880
	Off-Road Gasoline	140	100	x	x	x	x	x	x
	Off-Road Diesel	420	590	740	660	580	580	820	450
	Pipelines	-	-	x	x	x	x	x	x
c.	Fugitive Sources	40	300	850	750	570	540	450	490
	Coal Mining	-	-	-	-	-	-	-	-
	Oil and Natural Gas	40	300	850	750	570	540	450	490
INDUSTRIAL PROCESSES²		76.9	62.3	132	95	145	166	199	372
a.	Mineral Products	57	0.39	0.22	0.24	0.19	0.12	0.11	0.12
	Cement Production	57	-	-	-	-	-	-	-
	Lime Production	-	-	-	-	-	-	-	-
	Mineral Products Use	0.6	0.39	0.22	0.24	0.19	0.12	0.11	0.12
b.	Chemical Industry ³	-	-	-	-	-	-	-	-
	Adipic Acid Production	-	-	-	-	-	-	-	-
c.	Metal Production	-	-	-	-	-	-	-	-
	Iron and Steel Production	-	-	-	-	-	-	-	-
	Aluminum Production	-	-	-	-	-	-	-	-
	SF ₆ Used in Magnesium Smelters and Casters	-	-	-	-	-	-	-	-
d.	Production and Consumption of Halocarbons and SF ₆ ⁴	0.98	39	66	69	79	87	92	93
e.	Other & Undifferentiated Production	19	23	66	26	67	79	110	280
SOLVENT & OTHER PRODUCT USE		3.7	7.7	6	5.3	4	3.7	3.8	4.7
AGRICULTURE		49	51	61	65	65	62	59	57
a.	Enteric Fermentation	18	20	25	27	27	26	26	25
b.	Manure Management	14	14	16	16	16	16	16	16
c.	Agriculture Soils	17	17	20	22	22	21	17	17
	Direct Sources	8.3	8.1	9.6	10	11	10	7.6	7.3
	Pasture, Range and Paddock Manure	1.6	1.7	2.1	2.2	2.2	2.1	2	2
	Indirect Sources	7	7	9	9	9	9	8	7
d.	Field Burning of Agricultural Residues	-	-	-	-	-	-	-	-
WASTE		600	650	650	660	660	600	600	560
a.	Solid Waste Disposal on Land	570	620	620	630	630	570	570	530
b.	Wastewater Handling	33	31	30	30	30	30	30	30
c.	Waste Incineration	-	-	-	-	-	-	-	-

Notes:

- Emissions from ethanol and biodiesel are included in the Transport categories using gasoline and diesel respectively.
 - Emissions associated with the consumption of PFCs and SF₆ (except for electric utilities) are only reported at the national level.
 - Emissions from the Ammonia Production, Nitric Acid Production and Petrochemical Production subcategories are included in Other & Undifferentiated Production within the provincial/territorial tables.
 - Only SF₆ emissions from electrical equipment are included. SF₆ emission estimates for semi-conductor manufacturing are only available at the national level.
- Indicates no emissions
0.0 Indicates emissions truncated due to rounding
x Indicates data has been suppressed to respect confidentiality
Note that the 2012 estimates are based on preliminary energy data; these data, though the best available information at the time of publication, are subject to revision in the next submission year.

Table A11–3 2012 GHG Emission Summary for Newfoundland and Labrador

Greenhouse Gas Categories		Greenhouse Gases								
		CO ₂	CH ₄	CH ₄	N ₂ O	N ₂ O	HFCs	PFCs	SF ₆	TOTAL
Global Warming Potential		kt	kt	21 kt CO ₂ equivalent	kt	310 kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent
Unit		kt	kt	kt CO ₂ equivalent	kt	kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent
TOTAL		7 700	35	740	0.67	210	92	-	1	8 740
ENERGY		7 420	7.8	160	0.5	200	-	-	-	7 750
a.	Stationary Combustion Sources	3 350	5	100	0.1	30	-	-	-	3 500
	Electricity and Heat Generation	834	0.02	0.31	0.03	8	-	-	-	843
	Fossil Fuel Production and Refining	1 500	3	60	0.04	10	-	-	-	1 600
	Mining & Oil and Gas Extraction	352	0.0	0.09	0.0	1	-	-	-	353
	Manufacturing Industries	84.3	0.0	0.02	0.0	0.6	-	-	-	85
	Construction	9.14	0.0	0.0	0.0	0.04	-	-	-	9.18
	Commercial & Institutional	199	0.0	0.05	0.01	1	-	-	-	200
	Residential	360	3	60	0.03	10	-	-	-	428
	Agriculture & Forestry	11.1	0.0	0.0	0.0	0.04	-	-	-	11.1
b.	Transport ¹	3 620	0.8	20	0.4	100	-	-	-	3 770
	Civil Aviation (Domestic Aviation)	187	0.01	0.2	0.01	2	-	-	-	190
	Road Transportation	2 230	0.2	4	0.15	46	-	-	-	2 280
	Light-Duty Gasoline Vehicles	701	0.06	1.3	0.05	15	-	-	-	717
	Light-Duty Gasoline Trucks	896	0.09	1.8	0.06	19	-	-	-	917
	Heavy-Duty Gasoline Vehicles	69	0.0	0.05	0.01	1.9	-	-	-	70.9
	Motorcycles	5.29	0.0	0.04	0.0	0.03	-	-	-	5.36
	Light-Duty Diesel Vehicles	2.57	0.0	0.0	0.0	0.06	-	-	-	2.63
	Light-Duty Diesel Trucks	23.4	0.0	0.01	0.0	0.6	-	-	-	24
	Heavy-Duty Diesel Vehicles	534	0.02	0.5	0.03	9	-	-	-	544
	Propane & Natural Gas Vehicles	0.45	0.0	0.0	0.0	0.0	-	-	-	0.46
	Railways	-	-	-	-	-	-	-	-	-
	Navigation (Domestic Marine)	381	0.03	0.6	0.1	30	-	-	-	410
	Other Transportation	817	0.5	10	0.2	50	-	-	-	880
	Off-Road Gasoline	x	x	x	x	x	-	-	-	x
	Off-Road Diesel	398	0.02	0.5	0.2	50	-	-	-	450
	Pipelines	x	x	x	x	x	-	-	-	x
c.	Fugitive Sources	450	1.6	34	0.01	2	-	-	-	490
	Coal Mining	-	-	-	-	-	-	-	-	-
	Oil and Natural Gas	450	1.6	34	0.01	2	-	-	-	490
INDUSTRIAL PROCESSES²		280	-	-	-	-	92	-	1	372
a.	Mineral Products	0.12	-	-	-	-	-	-	-	0.12
	Cement Production	-	-	-	-	-	-	-	-	-
	Lime Production	-	-	-	-	-	-	-	-	-
	Mineral Product Use	0.12	-	-	-	-	-	-	-	0.12
b.	Chemical Industry ³	-	-	-	-	-	-	-	-	-
	Adipic Acid Production	-	-	-	-	-	-	-	-	-
c.	Metal Production	-	-	-	-	-	-	-	-	-
	Iron and Steel Production	-	-	-	-	-	-	-	-	-
	Aluminum Production	-	-	-	-	-	-	-	-	-
	SF ₆ Used in Magnesium Smelters and Casters	-	-	-	-	-	-	-	-	-
d.	Production and Consumption of Halocarbons and SF ₆ ⁴	-	-	-	-	-	92	-	1	93
e.	Other & Undifferentiated Production	280	-	-	-	-	-	-	-	280
SOLVENT & OTHER PRODUCT USE		-	-	-	0.02	4.7	-	-	-	4.7
AGRICULTURE		-	1.6	33	0.08	20	-	-	-	57
a.	Enteric Fermentation	-	1.2	25	-	-	-	-	-	25
b.	Manure Management	-	0.36	7.5	0.03	8.15	-	-	-	16
c.	Agriculture Soils	-	-	-	0.05	17	-	-	-	17
	Direct Sources	-	-	-	0.02	7.3	-	-	-	7.3
	Pasture, Range and Paddock Manure	-	-	-	0.01	2	-	-	-	2
	Indirect Sources	-	-	-	0.02	7	-	-	-	7
d.	Field Burning of Agricultural Residues	-	-	-	-	-	-	-	-	-
WASTE		-	26	550	0.03	10	-	-	-	560
a.	Solid Waste Disposal on Land	-	25	530	-	-	-	-	-	530
b.	Wastewater Handling	-	0.96	20	0.03	10	-	-	-	30
c.	Waste Incineration	-	-	-	-	-	-	-	-	-

Notes:

- Emissions from ethanol and biodiesel are included in the Transport categories using gasoline and diesel respectively.
 - Emissions associated with the consumption of PFCs and SF₆ (except for electric utilities) are only reported at the national level.
 - Emissions from the Ammonia Production, Nitric Acid Production and Petrochemical Production subcategories are included in Other & Undifferentiated Production within the provincial/territorial tables.
 - Only SF₆ emissions from electrical equipment are included. SF₆ emission estimates for semi-conductor manufacturing are only available at the national level.
- Indicates no emissions
0.0 Indicates emissions truncated due to rounding
x Indicates data has been suppressed to respect confidentiality
Note that the 2012 estimates are based on preliminary energy data; these data, though the best available information at the time of publication, are subject to revision in the next submission year.

Table A11-4 1990-2012 GHG Emission Summary for Prince Edward Island

Greenhouse Gas Categories		1990	2000	2005	2008	2009	2010	2011	2012
<i>kt CO₂ equivalent</i>									
TOTAL		1 960	2 180	2 150	1 990	1 980	2 020	2 070	1 940
ENERGY		1 430	1 570	1 480	1 440	1 440	1 510	1 570	1 410
a.	Stationary Combustion Sources	733	735	636	656	646	669	741	622
	Electricity and Heat Generation	103	52.5	4.72	4.09	5.97	1.57	1.22	10.7
	Fossil Fuel Production and Refining	0.11	2.6	-	-	-	-	0.15	-
	Mining & Oil and Gas Extraction	0.77	4.93	-	-	-	-	-	-
	Manufacturing Industries	54.7	135	143	162	129	169	140	127
	Construction	11	6.61	10.3	10.4	8.21	20.5	10.1	3.56
	Commercial & Institutional	158	178	119	62.7	51.9	47.2	85.7	73.6
	Residential	387	324	336	397	434	401	473	390
	Agriculture & Forestry	18.4	31.6	23.8	19.4	17.6	29.3	30.2	17.3
b.	Transport ¹	695	830	843	782	794	839	830	789
	Civil Aviation (Domestic Aviation)	17	11	14	17	17	18	16	16
	Road Transportation	507	578	615	608	613	608	507	489
	Light-Duty Gasoline Vehicles	243	227	215	214	204	209	161	157
	Light-Duty Gasoline Trucks	113	194	233	233	223	229	177	173
	Heavy-Duty Gasoline Vehicles	51.1	17.4	23.6	24.4	23.7	24.5	19.2	19
	Motorcycles	1.03	1.4	2.7	2.78	2.69	2.8	2.18	2.16
	Light-Duty Diesel Vehicles	2.34	1.82	x	x	x	x	2.36	2.45
	Light-Duty Diesel Trucks	3.16	7.17	9.04	8.95	8.56	8.77	9.16	9.06
	Heavy-Duty Diesel Vehicles	92.8	129	129	123	149	132	136	126
	Propane & Natural Gas Vehicles	1.1	0.76	x	x	x	x	-	-
	Railways	-	-	-	-	-	-	-	-
	Navigation (Domestic Marine)	89	85	99	80	81	110	140	94
	Other Transportation	83	160	120	77	83	110	160	190
	Off-Road Gasoline	44	74	77	x	57	70	x	x
	Off-Road Diesel	39	82	x	-	x	x	94	120
	Pipelines	-	-	x	x	x	x	x	x
c.	Fugitive Sources	-	-	-	-	-	-	-	-
	Coal Mining	-	-	-	-	-	-	-	-
	Oil and Natural Gas	-	-	-	-	-	-	-	-
INDUSTRIAL PROCESSES²		3.68	16.1	26.4	26.5	30	31.5	33.2	34.9
a.	Mineral Products	0.34	0.67	0.89	1.1	1.1	0.66	0.65	0.52
	Cement Production	-	-	-	-	-	-	-	-
	Lime Production	-	-	-	-	-	-	-	-
	Mineral Products Use	0.34	0.67	0.89	1.1	1.1	0.66	0.65	0.52
b.	Chemical Industry ³	-	-	-	-	-	-	-	-
	Adipic Acid Production	-	-	-	-	-	-	-	-
c.	Metal Production	-	-	-	-	-	-	-	-
	Iron and Steel Production	-	-	-	-	-	-	-	-
	Aluminum Production	-	-	-	-	-	-	-	-
	SF ₆ Used in Magnesium Smelters and Casters	-	-	-	-	-	-	-	-
d.	Production and Consumption of Halocarbons and SF ₆ ⁴	0.02	13	24	24	27	30	31	33
e.	Other & Undifferentiated Production	3.3	2.8	1.8	1.6	1.8	0.99	1.1	0.99
SOLVENT & OTHER PRODUCT USE		0.84	2	1.6	1.4	1.1	1	1	1.3
AGRICULTURE		440	490	540	420	400	370	350	390
a.	Enteric Fermentation	120	110	110	100	92	91	89	91
b.	Manure Management	46	47	46	38	34	33	33	33
c.	Agriculture Soils	270	330	380	280	270	240	230	260
	Direct Sources	150	190	220	160	150	140	130	150
	Pasture, Range and Paddock Manure	17	17	16	15	14	13	13	13
	Indirect Sources	100	100	100	100	100	90	90	100
d.	Field Burning of Agricultural Residues	0.08	0.2	0.2	0.2	0.1	0.1	0.1	0.1
WASTE		92	110						
a.	Solid Waste Disposal on Land	75	89	91	89	89	89	89	89
b.	Wastewater Handling	5.7	7.2	7.3	7.5	7.3	7.3	7.4	7.5
c.	Waste Incineration	11	12	12	12	12	12	13	13

Notes:

- Emissions from ethanol and biodiesel are included in the Transport categories using gasoline and diesel respectively.
 - Emissions associated with the consumption of PFCs and SF₆ (except for electric utilities) are only reported at the national level.
 - Emissions from the Ammonia Production, Nitric Acid Production and Petrochemical Production subcategories are included in Other & Undifferentiated Production within the provincial/territorial tables.
 - Only SF₆ emissions from electrical equipment are included. SF₆ emission estimates for semi-conductor manufacturing are only available at the national level.
- Indicates no emissions
0.0 Indicates emissions truncated due to rounding
x Indicates data has been suppressed to respect confidentiality
Note that the 2012 estimates are based on preliminary energy data; these data, though the best available information at the time of publication, are subject to revision in the next submission year.

Table A11–5 2012 GHG Emission Summary for Prince Edward Island

Greenhouse Gas Categories		Greenhouse Gases								
		CO ₂	CH ₄	CH ₄	N ₂ O	N ₂ O	HFCs	PFCs	SF ₆	TOTAL
Global Warming Potential		kt	kt	21 kt CO ₂ equivalent	kt	310 kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent
Unit		kt	kt	kt CO ₂ equivalent	kt	kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent
TOTAL		1 320	12	250	1.1	340	33	-	0.01	1 940
ENERGY		1 310	2.5	53	0.2	50	-	-	-	1 410
a.	Stationary Combustion Sources	562	2	50	0.03	10	-	-	-	622
	Electricity and Heat Generation	10.6	0.0	0.01	0.0	0.06	-	-	-	10.7
	Fossil Fuel Production and Refining	-	-	-	-	-	-	-	-	-
	Mining & Oil and Gas Extraction	-	-	-	-	-	-	-	-	-
	Manufacturing Industries	127	0.01	0.1	0.0	0.8	-	-	-	127
	Construction	3.54	0.0	0.0	0.0	0.01	-	-	-	3.56
	Commercial & Institutional	73.1	0.0	0.02	0.0	0.5	-	-	-	73.6
	Residential	331	2	50	0.03	9	-	-	-	390
	Agriculture & Forestry	17.3	0.0	0.0	0.0	0.08	-	-	-	17.3
b.	Transport ¹	747	0.2	4	0.1	40	-	-	-	789
	Civil Aviation (Domestic Aviation)	15.9	0.0	0.01	0.0	0.1	-	-	-	16
	Road Transportation	475	0.05	1	0.04	13	-	-	-	489
	Light-Duty Gasoline Vehicles	152	0.02	0.41	0.02	4.9	-	-	-	157
	Light-Duty Gasoline Trucks	167	0.02	0.49	0.02	5.3	-	-	-	173
	Heavy-Duty Gasoline Vehicles	18.4	0.0	0.03	0.0	0.58	-	-	-	19
	Motorcycles	2.12	0.0	0.02	0.0	0.02	-	-	-	2.16
	Light-Duty Diesel Vehicles	2.39	0.0	0.0	0.0	0.06	-	-	-	2.45
	Light-Duty Diesel Trucks	8.84	0.0	0.01	0.0	0.2	-	-	-	9.06
	Heavy-Duty Diesel Vehicles	124	0.01	0.1	0.01	2	-	-	-	126
	Propane & Natural Gas Vehicles	-	-	-	-	-	-	-	-	-
	Railways	-	-	-	-	-	-	-	-	-
	Navigation (Domestic Marine)	83.4	0.01	0.1	0.03	10	-	-	-	94
	Other Transportation	173	0.1	2	0.05	10	-	-	-	190
	Off-Road Gasoline	x	x	x	x	x	-	-	-	x
	Off-Road Diesel	105	0.01	0.1	0.04	10	-	-	-	120
	Pipelines	x	x	x	x	x	-	-	-	x
c.	Fugitive Sources	-	-	-	-	-	-	-	-	-
	Coal Mining	-	-	-	-	-	-	-	-	-
	Oil and Natural Gas	-	-	-	-	-	-	-	-	-
INDUSTRIAL PROCESSES²		1.51	-	-	-	-	33	-	0.01	34.9
a.	Mineral Products	0.52	-	-	-	-	-	-	-	0.52
	Cement Production	-	-	-	-	-	-	-	-	-
	Lime Production	-	-	-	-	-	-	-	-	-
	Mineral Product Use	0.52	-	-	-	-	-	-	-	0.52
b.	Chemical Industry ³	-	-	-	-	-	-	-	-	-
	Adipic Acid Production	-	-	-	-	-	-	-	-	-
c.	Metal Production	-	-	-	-	-	-	-	-	-
	Iron and Steel Production	-	-	-	-	-	-	-	-	-
	Aluminum Production	-	-	-	-	-	-	-	-	-
	SF ₆ Used in Magnesium Smelters and Casters	-	-	-	-	-	-	-	-	-
d.	Production and Consumption of Halocarbons and SF ₆ ⁴	-	-	-	-	-	33	-	0.01	33
e.	Other & Undifferentiated Production	0.99	-	-	-	-	-	-	-	0.99
SOLVENT & OTHER PRODUCT USE		-	-	-	0.0	1.3	-	-	-	1.3
AGRICULTURE		-	5	100	0.9	300	-	-	-	390
a.	Enteric Fermentation	-	4.3	91	-	-	-	-	-	91
b.	Manure Management	-	0.65	14	0.06	19.2	-	-	-	33
c.	Agriculture Soils	-	-	-	0.85	260	-	-	-	260
	Direct Sources	-	-	-	0.49	150	-	-	-	150
	Pasture, Range and Paddock Manure	-	-	-	0.04	13	-	-	-	13
	Indirect Sources	-	-	-	0.3	100	-	-	-	100
d.	Field Burning of Agricultural Residues	-	0.01	0.1	0.0	0.04	-	-	-	0.1
WASTE		11	4.4	93	0.01	5	-	-	-	110
a.	Solid Waste Disposal on Land	-	4.2	89	-	-	-	-	-	89
b.	Wastewater Handling	-	0.22	4.6	0.01	3	-	-	-	7.5
c.	Waste Incineration	11	-	-	0.01	2	-	-	-	13

Notes:

- Emissions from ethanol and biodiesel are included in the Transport categories using gasoline and diesel respectively.
 - Emissions associated with the consumption of PFCs and SF₆ (except for electric utilities) are only reported at the national level.
 - Emissions from the Ammonia Production, Nitric Acid Production and Petrochemical Production subcategories are included in Other & Undifferentiated Production within the provincial/territorial tables.
 - Only SF₆ emissions from electrical equipment are included. SF₆ emission estimates for semi-conductor manufacturing are only available at the national level.
- Indicates no emissions
0.0 Indicates emissions truncated due to rounding
x Indicates data has been suppressed to respect confidentiality
Note that the 2012 estimates are based on preliminary energy data; these data, though the best available information at the time of publication, are subject to revision in the next submission year.

Table A11-6 1990-2012 GHG Emission Summary for Nova Scotia

Greenhouse Gas Categories		1990	2000	2005	2008	2009	2010	2011	2012
<i>kt CO₂ equivalent</i>									
TOTAL		19 100	21 400	23 100	20 800	20 200	19 900	20 600	19 000
ENERGY		17 600	19 900	21 600	19 500	19 000	18 700	19 300	17 700
a.	Stationary Combustion Sources	11 400	14 200	15 500	14 100	13 900	13 200	13 400	12 000
	Electricity and Heat Generation	6 870	9 440	10 700	9 420	9 360	8 790	8 450	7 630
	Fossil Fuel Production and Refining	650	920	1 400	1 200	1 200	1 200	1 300	1 300
	Mining & Oil and Gas Extraction	35.2	52.8	38.2	8.91	8.25	8.8	21.9	7.75
	Manufacturing Industries	757	727	555	611	651	581	535	519
	Construction	49.2	27.8	48.2	32.4	25	25.8	23.6	20.4
	Commercial & Institutional	790	915	1 250	913	808	776	914	680
	Residential	2 140	1 840	1 430	1 770	1 790	1 800	2 010	1 770
	Agriculture & Forestry	103	233	95.3	125	69.4	80.8	108	69.2
b.	Transport ¹	4 870	5 560	6 010	5 300	4 990	5 310	5 820	5 550
	Civil Aviation (Domestic Aviation)	280	310	260	240	220	220	210	200
	Road Transportation	3 090	3 480	3 760	3 780	3 620	3 710	3 790	3 720
	Light-Duty Gasoline Vehicles	1 560	1 290	1 270	1 270	1 200	1 220	1 260	1 250
	Light-Duty Gasoline Trucks	672	1 170	1 300	1 300	1 230	1 260	1 300	1 300
	Heavy-Duty Gasoline Vehicles	164	89.7	110	114	109	113	119	119
	Motorcycles	9.85	7.5	9.21	9.54	9.13	9.43	9.89	9.94
	Light-Duty Diesel Vehicles	23.1	19.3	23.9	25.9	25.7	27.6	30.5	32
	Light-Duty Diesel Trucks	23.3	47	52.5	51.7	48.7	49.9	52.5	52.5
	Heavy-Duty Diesel Vehicles	635	851	985	1 000	1 000	1 030	1 010	951
	Propane & Natural Gas Vehicles	7.5	4.1	4.9	5.5	5.4	5.2	4.1	3.5
	Railways	66	73	120	140	120	140	170	130
	Navigation (Domestic Marine)	610	670	850	490	450	490	530	400
	Other Transportation	820	1 000	1 000	650	590	750	1 100	1 100
	Off-Road Gasoline	330	400	270	260	110	150	300	360
	Off-Road Diesel	490	620	720	340	400	530	820	740
	Pipelines	-	-	34.3	58.4	77.1	74	2.92	3.89
c.	Fugitive Sources	1 300	180	130	130	120	120	110	100
	Coal Mining	1 000	60	0.01	-	-	-	-	-
	Oil and Natural Gas	50	130	130	130	120	120	110	100
	INDUSTRIAL PROCESSES²	304	384	457	429	333	440	514	505
a.	Mineral Products	180	220	240	210	97	180	190	200
	Cement Production	170	220	230	210	95	180	180	200
	Lime Production	-	-	-	-	-	-	-	-
	Mineral Products Use	8.4	2.5	3	2.4	2.2	1.6	1.7	1.6
b.	Chemical Industry ³	-	-	-	-	-	-	-	-
	Adipic Acid Production	-	-	-	-	-	-	-	-
c.	Metal Production	-	-	-	-	-	-	-	-
	Iron and Steel Production	-	-	-	-	-	-	-	-
	Aluminum Production	-	-	-	-	-	-	-	-
	SF ₆ Used in Magnesium Smelters and Casters	-	-	-	-	-	-	-	-
d.	Production and Consumption of Halocarbons and SF ₆ ⁴	24	98	170	160	180	210	230	220
e.	Other & Undifferentiated Production	100	68	56	56	60	50	100	80
	SOLVENT & OTHER PRODUCT USE	5.9	14	11	9.6	7.3	6.7	6.8	8.4
	AGRICULTURE	440	440	420	390	380	360	350	360
a.	Enteric Fermentation	180	180	170	160	150	140	140	140
b.	Manure Management	92	91	86	79	76	73	74	74
c.	Agriculture Soils	170	170	170	150	150	150	130	140
	Direct Sources	83	82	84	76	77	77	64	71
	Pasture, Range and Paddock Manure	18	19	18	17	15	14	14	14
	Indirect Sources	70	70	70	60	60	60	50	60
d.	Field Burning of Agricultural Residues	0.01	0.1	0.1	0.07	0.04	0.04	0.05	0.03
	WASTE	780	710	560	500	480	470	450	450
a.	Solid Waste Disposal on Land	710	650	500	440	410	410	390	390
b.	Wastewater Handling	46	48	48	48	48	48	48	48
c.	Waste Incineration	27	15	13	14	13	12	11	11

Notes:

- Emissions from ethanol and biodiesel are included in the Transport categories using gasoline and diesel respectively.
 - Emissions associated with the consumption of PFCs and SF₆ (except for electric utilities) are only reported at the national level.
 - Emissions from the Ammonia Production, Nitric Acid Production and Petrochemical Production subcategories are included in Other & Undifferentiated Production within the provincial/territorial tables.
 - Only SF₆ emissions from electrical equipment are included. SF₆ emission estimates for semi-conductor manufacturing are only available at the national level.
- Indicates no emissions
0.0 Indicates emissions truncated due to rounding
x Indicates data has been suppressed to respect confidentiality
Note that the 2012 estimates are based on preliminary energy data; these data, though the best available information at the time of publication, are subject to revision in the next submission year.

Table A11–7 2012 GHG Emission Summary for Nova Scotia

Greenhouse Gas Categories		Greenhouse Gases								
		CO ₂	CH ₄	CH ₄	N ₂ O	N ₂ O	HFCs	PFCs	SF ₆	TOTAL
Global Warming Potential		kt	kt	21	kt	310	kt CO ₂	kt CO ₂	kt CO ₂	kt CO ₂
Unit		kt	kt	equivalent	kt	equivalent	equivalent	equivalent	equivalent	equivalent
TOTAL		17 400	42	890	1.6	490	200	-	23	19 000
ENERGY		17 100	14	290	0.9	300	-	-	-	17 700
a.	Stationary Combustion Sources	11 700	10	200	0.3	90	-	-	-	12 000
	Electricity and Heat Generation	7 580	0.39	8.1	0.1	30	-	-	-	7 630
	Fossil Fuel Production and Refining	1 280	1	30	0.01	5	-	-	-	1 300
	Mining & Oil and Gas Extraction	7.69	0.0	0.0	0.0	0.06	-	-	-	7.75
	Manufacturing Industries	506	0.05	1	0.04	10	-	-	-	519
	Construction	20.3	0.0	0.0	0.0	0.1	-	-	-	20.4
	Commercial & Institutional	675	0.01	0.2	0.02	5	-	-	-	680
	Residential	1 560	9	200	0.1	30	-	-	-	1 770
	Agriculture & Forestry	68.8	0.0	0.02	0.0	0.37	-	-	-	69.2
b.	Transport ¹	5 330	0.8	20	0.7	200	-	-	-	5 550
	Civil Aviation (Domestic Aviation)	199	0.01	0.2	0.01	2	-	-	-	200
	Road Transportation	3 640	0.3	6	0.23	70	-	-	-	3 720
	Light-Duty Gasoline Vehicles	1 220	0.11	2.3	0.08	24	-	-	-	1 250
	Light-Duty Gasoline Trucks	1 270	0.12	2.5	0.08	25	-	-	-	1 300
	Heavy-Duty Gasoline Vehicles	116	0.0	0.09	0.01	3	-	-	-	119
	Motorcycles	9.81	0.0	0.07	0.0	0.06	-	-	-	9.94
	Light-Duty Diesel Vehicles	31.2	0.0	0.01	0.0	0.8	-	-	-	32
	Light-Duty Diesel Trucks	51.2	0.0	0.03	0.0	1	-	-	-	52.5
	Heavy-Duty Diesel Vehicles	934	0.04	0.8	0.05	20	-	-	-	951
	Propane & Natural Gas Vehicles	3.47	0.0	0.03	0.0	0.02	-	-	-	3.5
	Railways	116	0.01	0.1	0.05	10	-	-	-	130
	Navigation (Domestic Marine)	367	0.03	0.5	0.09	30	-	-	-	400
	Other Transportation	1 010	0.5	9	0.3	90	-	-	-	1 100
	Off-Road Gasoline	346	0.4	9	0.01	2	-	-	-	360
	Off-Road Diesel	659	0.04	0.8	0.3	80	-	-	-	740
	Pipelines	3.78	0.0	0.08	0.0	0.03	-	-	-	3.89
c.	Fugitive Sources	50	2.5	53	0.0	1	-	-	-	100
	Coal Mining	-	-	-	-	-	-	-	-	-
	Oil and Natural Gas	50	2.5	53	0.0	1	-	-	-	100
	INDUSTRIAL PROCESSES²	283	-	-	-	-	200	-	23	505
a.	Mineral Products	200	-	-	-	-	-	-	-	200
	Cement Production	200	-	-	-	-	-	-	-	200
	Lime Production	-	-	-	-	-	-	-	-	-
	Mineral Product Use	1.6	-	-	-	-	-	-	-	1.6
b.	Chemical Industry ³	-	-	-	-	-	-	-	-	-
	Adipic Acid Production	-	-	-	-	-	-	-	-	-
c.	Metal Production	-	-	-	-	-	-	-	-	-
	Iron and Steel Production	-	-	-	-	-	-	-	-	-
	Aluminum Production	-	-	-	-	-	-	-	-	-
	SF ₆ Used in Magnesium Smelters and Casters	-	-	-	-	-	-	-	-	-
d.	Production and Consumption of Halocarbons and SF ₆ ⁴	-	-	-	-	-	200	-	23	220
e.	Other & Undifferentiated Production	80	-	-	-	-	-	-	-	80
	SOLVENT & OTHER PRODUCT USE	-	-	-	0.03	8.4	-	-	-	8.4
	AGRICULTURE	-	8.8	180	0.6	200	-	-	-	360
a.	Enteric Fermentation	-	6.7	140	-	-	-	-	-	140
b.	Manure Management	-	2	43	0.1	31.7	-	-	-	74
c.	Agriculture Soils	-	-	-	0.46	140	-	-	-	140
	Direct Sources	-	-	-	0.23	71	-	-	-	71
	Pasture, Range and Paddock Manure	-	-	-	0.05	14	-	-	-	14
	Indirect Sources	-	-	-	0.2	60	-	-	-	60
d.	Field Burning of Agricultural Residues	-	0.0	0.02	0.0	0.01	-	-	-	0.03
	WASTE	9.6	20	420	0.06	20	-	-	-	450
a.	Solid Waste Disposal on Land	-	18	390	-	-	-	-	-	390
b.	Wastewater Handling	-	1.4	30	0.06	20	-	-	-	48
c.	Waste Incineration	9.6	-	-	0.01	1	-	-	-	11

Notes:

1. Emissions from ethanol and biodiesel are included in the Transport categories using gasoline and diesel respectively.
 2. Emissions associated with the consumption of PFCs and SF₆ (except for electric utilities) are only reported at the national level.
 3. Emissions from the Ammonia Production, Nitric Acid Production and Petrochemical Production subcategories are included in Other & Undifferentiated Production within the provincial/territorial tables.
 4. Only SF₆ emissions from electrical equipment are included. SF₆ emission estimates for semi-conductor manufacturing are only available at the national level.
- Indicates no emissions
0.0 Indicates emissions truncated due to rounding
x Indicates data has been suppressed to respect confidentiality
Note that the 2012 estimates are based on preliminary energy data; these data, though the best available information at the time of publication, are subject to revision in the next submission year.

Table A11-8 1990-2012 GHG Emission Summary for New Brunswick

Greenhouse Gas Categories		1990	2000	2005	2008	2009	2010	2011	2012
<i>kt CO₂ equivalent</i>									
TOTAL		16 000	20 600	20 100	18 600	18 300	18 300	18 500	16 400
ENERGY		14 800	19 200	18 600	17 200	16 400	16 000	16 800	14 600
a.	Stationary Combustion Sources	10 700	13 800	13 200	12 200	11 700	10 700	10 500	9 270
	Electricity and Heat Generation	5 970	8 920	8 020	7 070	7 030	5 320	4 910	4 050
	Fossil Fuel Production and Refining	1 100	1 700	2 300	2 500	2 300	2 700	2 500	2 300
	Mining & Oil and Gas Extraction	125	131	156	66.9	88	146	257	202
	Manufacturing Industries	1 610	1 510	1 180	993	986	870	886	861
	Construction	68	41.3	5.5	25.5	19	53.8	18.8	13.6
	Commercial & Institutional	574	581	571	650	392	498	742	809
	Residential	1 170	883	898	910	849	952	1 060	948
	Agriculture & Forestry	52.4	64.4	31.5	27.8	61.4	112	115	84.5
b.	Transport ¹	4 050	5 300	5 260	4 740	4 400	5 050	6 020	5 070
	Civil Aviation (Domestic Aviation)	140	120	120	110	95	96	84	84
	Road Transportation	2 940	3 640	3 860	3 860	3 680	3 870	3 940	3 830
	Light-Duty Gasoline Vehicles	1 310	1 140	1 060	1 060	989	1 040	1 060	1 040
	Light-Duty Gasoline Trucks	651	1 080	1 210	1 210	1 140	1 190	1 230	1 210
	Heavy-Duty Gasoline Vehicles	164	89.1	127	131	124	132	138	136
	Motorcycles	7.04	6.74	10.5	10.8	10.2	10.9	11.3	11.2
	Light-Duty Diesel Vehicles	14.8	11.7	13.2	14.1	13.9	15.2	17.3	17.8
	Light-Duty Diesel Trucks	23.1	43.1	48.6	48.1	45.1	47.5	51.8	51
	Heavy-Duty Diesel Vehicles	768	1 260	1 380	1 400	1 360	1 430	1 420	1 370
	Propane & Natural Gas Vehicles	5	6.7	0.61	0.76	0.76	0.61	0.76	0.61
	Railways	130	230	290	250	250	310	x	x
	Navigation (Domestic Marine)	270	400	420	340	320	400	x	x
	Other Transportation	580	900	580	190	61	380	1 000	510
	Off-Road Gasoline	180	150	x	x	x	x	x	x
	Off-Road Diesel	390	750	430	7.9	-	290	720	200
	Pipelines	-	-	x	x	x	x	x	x
c.	Fugitive Sources	59	140	230	220	220	230	220	220
	Coal Mining	0.8	0.3	0.2	0.09	0.2	-	-	-
	Oil and Natural Gas	59	140	230	220	220	230	220	220
	INDUSTRIAL PROCESSES²	163	271	351	430	988	1 360	896	977
a.	Mineral Products	90	120	97	82	48	55	57	57
	Cement Production	-	-	-	-	-	-	-	-
	Lime Production	76.4	103	85.6	74.2	40.9	49	51	51.4
	Mineral Products Use	14	15	11	7.8	7.3	6.2	6.3	5.7
b.	Chemical Industry ³	-	-	-	-	-	-	-	-
	Adipic Acid Production	-	-	-	-	-	-	-	-
c.	Metal Production	-	-	-	-	-	-	-	-
	Iron and Steel Production	-	-	-	-	-	-	-	-
	Aluminum Production	-	-	-	-	-	-	-	-
	SF ₆ Used in Magnesium Smelters and Casters	-	-	-	-	-	-	-	-
d.	Production and Consumption of Halocarbons and SF ₆ ⁴	0.74	65	110	110	130	140	150	160
e.	Other & Undifferentiated Production	72	89	150	230	810	1 200	690	760
	SOLVENT & OTHER PRODUCT USE	4.8	11	8.8	7.7	5.8	5.4	5.4	6.8
	AGRICULTURE	440	470	490	430	420	410	380	400
a.	Enteric Fermentation	150	150	140	130	130	130	130	130
b.	Manure Management	66	72	69	63	61	60	58	57
c.	Agriculture Soils	220	250	280	230	230	220	190	220
	Direct Sources	120	140	160	130	130	120	100	130
	Pasture, Range and Paddock Manure	19	19	18	16	16	16	15	15
	Indirect Sources	80	90	100	80	80	80	70	80
d.	Field Burning of Agricultural Residues	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.02
	WASTE	590	620	620	580	560	540	480	450
a.	Solid Waste Disposal on Land	560	590	590	550	530	510	450	420
b.	Wastewater Handling	27	29	29	29	28	29	29	29
c.	Waste Incineration	-	-	-	-	-	-	-	-

Notes:

- Emissions from ethanol and biodiesel are included in the Transport categories using gasoline and diesel respectively.
 - Emissions associated with the consumption of PFCs and SF₆ (except for electric utilities) are only reported at the national level.
 - Emissions from the Ammonia Production, Nitric Acid Production and Petrochemical Production subcategories are included in Other & Undifferentiated Production within the provincial/territorial tables.
 - Only SF₆ emissions from electrical equipment are included. SF₆ emission estimates for semi-conductor manufacturing are only available at the national level.
- Indicates no emissions
0.0 Indicates emissions truncated due to rounding
x Indicates data has been suppressed to respect confidentiality
Note that the 2012 estimates are based on preliminary energy data; these data, though the best available information at the time of publication, are subject to revision in the next submission year.

Table A11–9 2012 GHG Emission Summary for New Brunswick

Greenhouse Gas Categories		Greenhouse Gases								
		CO ₂	CH ₄	CH ₄	N ₂ O	N ₂ O	HFCs	PFCs	SF ₆	TOTAL
Global Warming Potential				21		310				
Unit		kt	kt	kt CO ₂ equivalent	kt	kt CO ₂ equivalent				
TOTAL		14 800	41	860	1.8	540	160	-	0.55	16 400
ENERGY		14 000	13	270	0.9	300	-	-	-	14 600
a.	Stationary Combustion Sources	8 970	10	200	0.3	90	-	-	-	9 270
	Electricity and Heat Generation	4 030	0.3	6.2	0.06	20	-	-	-	4 050
	Fossil Fuel Production and Refining	2 290	0.04	0.9	0.02	5	-	-	-	2 300
	Mining & Oil and Gas Extraction	201	0.01	0.14	0.0	1	-	-	-	202
	Manufacturing Industries	833	0.1	2	0.08	30	-	-	-	861
	Construction	13.5	0.0	0.0	0.0	0.07	-	-	-	13.6
	Commercial & Institutional	803	0.01	0.29	0.02	5	-	-	-	809
	Residential	719	9	200	0.1	30	-	-	-	948
	Agriculture & Forestry	84	0.0	0.03	0.0	0.48	-	-	-	84.5
b.	Transport ¹	4 880	0.7	10	0.6	200	-	-	-	5 070
	Civil Aviation (Domestic Aviation)	82.7	0.01	0.1	0.0	0.8	-	-	-	84
	Road Transportation	3 750	0.3	6	0.25	77	-	-	-	3 830
	Light-Duty Gasoline Vehicles	1 020	0.1	2.1	0.07	23	-	-	-	1 040
	Light-Duty Gasoline Trucks	1 180	0.12	2.6	0.08	26	-	-	-	1 210
	Heavy-Duty Gasoline Vehicles	133	0.01	0.11	0.01	3.5	-	-	-	136
	Motorcycles	11.1	0.0	0.08	0.0	0.07	-	-	-	11.2
	Light-Duty Diesel Vehicles	17.4	0.0	0.01	0.0	0.4	-	-	-	17.8
	Light-Duty Diesel Trucks	49.7	0.0	0.03	0.0	1	-	-	-	51
	Heavy-Duty Diesel Vehicles	1 340	0.06	1	0.07	20	-	-	-	1 370
	Propane & Natural Gas Vehicles	0.6	0.0	0.01	0.0	0.0	-	-	-	0.61
	Railways	x	x	x	x	x	-	-	-	x
	Navigation (Domestic Marine)	x	x	x	x	x	-	-	-	x
	Other Transportation	478	0.4	8	0.08	20	-	-	-	510
	Off-Road Gasoline	x	x	x	x	x	-	-	-	x
	Off-Road Diesel	177	0.01	0.2	0.07	20	-	-	-	200
	Pipelines	x	x	x	x	x	-	-	-	x
c.	Fugitive Sources	160	2.4	51	0.01	4	-	-	-	220
	Coal Mining	-	-	-	-	-	-	-	-	-
	Oil and Natural Gas	160	2.4	51	0.01	4	-	-	-	220
INDUSTRIAL PROCESSES²		820	-	-	-	-	160	-	0.55	977
a.	Mineral Products	57	-	-	-	-	-	-	-	57
	Cement Production	-	-	-	-	-	-	-	-	-
	Lime Production	51.4	-	-	-	-	-	-	-	51.4
	Mineral Product Use	5.7	-	-	-	-	-	-	-	5.7
b.	Chemical Industry ³	-	-	-	-	-	-	-	-	-
	Adipic Acid Production	-	-	-	-	-	-	-	-	-
c.	Metal Production	-	-	-	-	-	-	-	-	-
	Iron and Steel Production	-	-	-	-	-	-	-	-	-
	Aluminum Production	-	-	-	-	-	-	-	-	-
	SF ₆ Used in Magnesium Smelters and Casters	-	-	-	-	-	-	-	-	-
d.	Production and Consumption of Halocarbons and SF ₆ ⁴	-	-	-	-	-	160	-	0.55	160
e.	Other & Undifferentiated Production	760	-	-	-	-	-	-	-	760
SOLVENT & OTHER PRODUCT USE		-	-	-	0.02	6.8	-	-	-	6.8
AGRICULTURE		-	7.3	150	0.8	300	-	-	-	400
a.	Enteric Fermentation	-	6	130	-	-	-	-	-	130
b.	Manure Management	-	1.3	28	0.09	29.3	-	-	-	57
c.	Agriculture Soils	-	-	-	0.71	220	-	-	-	220
	Direct Sources	-	-	-	0.41	130	-	-	-	130
	Pasture, Range and Paddock Manure	-	-	-	0.05	15	-	-	-	15
	Indirect Sources	-	-	-	0.3	80	-	-	-	80
d.	Field Burning of Agricultural Residues	-	0.0	0.01	0.0	0.01	-	-	-	0.02
WASTE		-	21	430	0.05	10	-	-	-	450
a.	Solid Waste Disposal on Land	-	20	420	-	-	-	-	-	420
b.	Wastewater Handling	-	0.65	14	0.05	10	-	-	-	29
c.	Waste Incineration	-	-	-	-	-	-	-	-	-

Notes:

1. Emissions from ethanol and biodiesel are included in the Transport categories using gasoline and diesel respectively.

2. Emissions associated with the consumption of PFCs and SF₆ (except for electric utilities) are only reported at the national level.

3. Emissions from the Ammonia Production, Nitric Acid Production and Petrochemical Production subcategories are included in Other & Undifferentiated Production within the provincial/territorial tables.

4. Only SF₆ emissions from electrical equipment are included. SF₆ emission estimates for semi-conductor manufacturing are only available at the national level.

- Indicates no emissions

0.0 Indicates emissions truncated due to rounding

x Indicates data has been suppressed to respect confidentiality

Note that the 2012 estimates are based on preliminary energy data; these data, though the best available information at the time of publication, are subject to revision in the next submission year.

Table A11-10 1990-2012 GHG Emission Summary for Quebec

Greenhouse Gas Categories								
	1990	2000	2005	2008	2009	2010	2011	2012
<i>kt CO₂ equivalent</i>								
TOTAL	84 000	84 000	85 600	84 600	83 600	79 200	80 600	78 300
ENERGY	57 700	60 200	60 800	61 400	61 100	57 400	58 200	56 200
a. Stationary Combustion Sources	29 600	27 900	26 500	24 900	24 700	21 600	21 800	20 700
Electricity and Heat Generation	1 480	562	601	431	633	427	401	520
Fossil Fuel Production and Refining	3 400	3 200	3 700	3 700	3 600	1 900	2 300	2 100
Mining & Oil and Gas Extraction	734	904	315	959	1 580	1 200	481	648
Manufacturing Industries	12 200	11 300	10 200	9 910	8 100	8 130	9 070	8 870
Construction	455	190	306	309	385	417	341	362
Commercial & Institutional	4 210	5 510	5 220	4 210	5 150	4 860	4 860	3 960
Residential	6 820	6 010	5 840	5 140	4 880	4 170	4 020	3 830
Agriculture & Forestry	287	261	290	291	410	447	397	404
b. Transport ¹	27 700	31 600	33 600	35 700	35 600	35 100	35 700	34 800
Civil Aviation (Domestic Aviation)	820	750	750	730	670	660	630	630
Road Transportation	20 600	24 900	27 500	27 400	27 400	27 500	27 300	27 300
Light-Duty Gasoline Vehicles	11 800	11 200	10 600	10 600	10 500	10 500	10 200	10 200
Light-Duty Gasoline Trucks	3 720	6 500	7 690	7 730	7 660	7 660	7 490	7 450
Heavy-Duty Gasoline Vehicles	578	539	854	889	892	903	891	895
Motorcycles	31.8	46.9	80.4	83.7	83.9	84.9	83.7	84.1
Light-Duty Diesel Vehicles	184	179	221	246	261	276	294	306
Light-Duty Diesel Trucks	192	357	360	361	363	366	373	372
Heavy-Duty Diesel Vehicles	3 980	6 080	7 670	7 470	7 580	7 660	7 930	7 990
Propane & Natural Gas Vehicles	110	36	34	29	26	30	30	34
Railways	570	800	710	900	930	850	900	940
Navigation (Domestic Marine)	1 400	1 300	1 300	1 600	1 800	1 300	990	840
Other Transportation	4 300	3 800	3 300	5 100	4 900	4 700	5 900	5 100
Off-Road Gasoline	1 400	1 300	1 400	1 100	1 400	1 300	1 800	1 400
Off-Road Diesel	2 900	2 500	1 600	3 700	3 300	3 200	4 000	3 500
Pipelines	25.8	107	335	255	227	154	150	201
c. Fugitive Sources	380	610	720	740	720	700	650	660
Coal Mining	-	-	-	-	-	-	-	-
Oil and Natural Gas	380	610	720	740	720	700	650	660
INDUSTRIAL PROCESSES²	13 600	11 400	11 800	10 400	9 820	9 810	11 000	10 400
a. Mineral Products	1 900	1 900	2 000	1 800	1 500	1 700	1 800	1 900
Cement Production	1 300	1 200	1 300	1 300	1 000	1 200	1 200	1 300
Lime Production	272	430	465	403	353	423	441	444
Mineral Products Use	240	300	270	180	150	110	130	120
b. Chemical Industry ³	-	-	-	-	-	-	-	-
Adipic Acid Production	-	-	-	-	-	-	-	-
c. Metal Production	10 200	7 690	7 140	6 330	6 100	5 880	5 830	5 460
Iron and Steel Production	-	17	-	30.4	22	35.1	36.3	30.8
Aluminum Production	7 810	6 410	7 030	6 270	6 060	5 840	5 800	5 410
SF ₆ Used in Magnesium Smelters and Casters	2 390	1 270	108	35.2	20.7	13.6	-	13.3
d. Production and Consumption of Halocarbons and SF ₆ ⁴	39	640	1 100	1 200	1 300	1 500	1 600	1 700
e. Other & Undifferentiated Production	1 500	1 200	1 600	980	840	710	1 800	1 400
SOLVENT & OTHER PRODUCT USE	45	110	89	80	61	56	58	72
AGRICULTURE	7 200	7 000	7 300	7 500	7 300	7 300	7 000	7 400
a. Enteric Fermentation	2 400	2 400	2 500	2 300	2 300	2 300	2 200	2 200
b. Manure Management	1 200	1 300	1 300	1 300	1 300	1 300	1 300	1 300
c. Agriculture Soils	3 500	3 300	3 500	3 900	3 700	3 800	3 500	4 000
Direct Sources	2 000	1 800	1 900	2 200	2 100	2 200	2 000	2 300
Pasture, Range and Paddock Manure	250	250	270	250	250	240	230	230
Indirect Sources	1 000	1 000	1 000	1 000	1 000	1 000	1 000	1 000
d. Field Burning of Agricultural Residues	0.4	0.2	0.2	0.2	0.2	0.2	0.2	0.2
WASTE	5 500	5 300	5 500	5 300	5 300	4 600	4 300	4 300
a. Solid Waste Disposal on Land	4 900	4 800	5 000	4 800	4 800	4 100	3 800	3 800
b. Wastewater Handling	250	230	230	240	240	240	240	240
c. Waste Incineration	350	260	270	280	250	280	270	270

Notes:

- Emissions from ethanol and biodiesel are included in the Transport categories using gasoline and diesel respectively.
 - Emissions associated with the consumption of PFCs and SF₆ (except for electric utilities) are only reported at the national level.
 - Emissions from the Ammonia Production, Nitric Acid Production and Petrochemical Production subcategories are included in Other & Undifferentiated Production within the provincial/territorial tables.
 - Only SF₆ emissions from electrical equipment are included. SF₆ emission estimates for semi-conductor manufacturing are only available at the national level.
- Indicates no emissions
0.0 Indicates emissions truncated due to rounding
x Indicates data has been suppressed to respect confidentiality
Note that the 2012 estimates are based on preliminary energy data; these data, though the best available information at the time of publication, are subject to revision in the next submission year.

Table A11–11 2012 GHG Emission Summary for Quebec

Greenhouse Gas Categories		Greenhouse Gases								TOTAL
		CO ₂	CH ₄	CH ₄	N ₂ O	N ₂ O	HFCs	PFCs	SF ₆	
Global Warming Potential		kt	kt	21 kt CO ₂ equivalent	kt	310 kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent
Unit		kt	kt	kt CO ₂ equivalent	kt	kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent
TOTAL		61 200	390	8 100	20	6 200	1 600	1 100	68	78 300
ENERGY		53 400	64	1 400	5	1 000	-	-	-	56 200
a.	Stationary Combustion Sources	19 600	40	800	1	300	-	-	-	20 700
	Electricity and Heat Generation	512	0.08	1.8	0.02	7	-	-	-	520
	Fossil Fuel Production and Refining	2 070	0.04	0.8	0.02	7	-	-	-	2 100
	Mining & Oil and Gas Extraction	644	0.02	0.49	0.01	4	-	-	-	648
	Manufacturing Industries	8 750	0.5	10	0.4	100	-	-	-	8 870
	Construction	360	0.01	0.14	0.01	2	-	-	-	362
	Commercial & Institutional	3 930	0.08	1.6	0.09	30	-	-	-	3 960
	Residential	2 890	40	800	0.5	100	-	-	-	3 830
	Agriculture & Forestry	398	0.01	0.14	0.02	5.6	-	-	-	404
b.	Transport ¹	33 600	4	90	4	1 000	-	-	-	34 800
	Civil Aviation (Domestic Aviation)	627	0.06	1	0.02	6	-	-	-	630
	Road Transportation	26 700	2	40	1.7	530	-	-	-	27 300
	Light-Duty Gasoline Vehicles	9 930	0.9	19	0.67	210	-	-	-	10 200
	Light-Duty Gasoline Trucks	7 280	0.7	15	0.48	150	-	-	-	7 450
	Heavy-Duty Gasoline Vehicles	871	0.03	0.66	0.08	24	-	-	-	895
	Motorcycles	83	0.03	0.62	0.0	0.48	-	-	-	84.1
	Light-Duty Diesel Vehicles	298	0.01	0.1	0.02	8	-	-	-	306
	Light-Duty Diesel Trucks	363	0.01	0.2	0.03	9	-	-	-	372
	Heavy-Duty Diesel Vehicles	7 850	0.3	7	0.4	100	-	-	-	7 990
	Propane & Natural Gas Vehicles	33.2	0.02	0.4	0.0	0.2	-	-	-	34
	Railways	828	0.05	1	0.3	100	-	-	-	940
	Navigation (Domestic Marine)	787	0.06	1	0.2	50	-	-	-	840
	Other Transportation	4 670	2	40	1	400	-	-	-	5 100
	Off-Road Gasoline	1 360	2	40	0.03	10	-	-	-	1 400
	Off-Road Diesel	3 120	0.2	4	1	400	-	-	-	3 500
	Pipelines	195	0.2	4.1	0.01	2	-	-	-	201
c.	Fugitive Sources	200	21	450	0.02	6	-	-	-	660
	Coal Mining	-	-	-	-	-	-	-	-	-
	Oil and Natural Gas	200	21	450	0.02	6	-	-	-	660
	INDUSTRIAL PROCESSES²	7 580	-	-	-	-	1 600	1 100	68	10 400
a.	Mineral Products	1 900	-	-	-	-	-	-	-	1 900
	Cement Production	1 300	-	-	-	-	-	-	-	1 300
	Lime Production	444	-	-	-	-	-	-	-	444
	Mineral Product Use	120	-	-	-	-	-	-	-	120
b.	Chemical Industry ³	-	-	-	-	-	-	-	-	-
	Adipic Acid Production	-	-	-	-	-	-	-	-	-
c.	Metal Production	4 370	-	-	-	-	-	1 070	18.4	5 460
	Iron and Steel Production	30.8	-	-	-	-	-	-	-	30.8
	Aluminum Production	4 330	-	-	-	-	-	1 070	5.01	5 410
	SF ₆ Used in Magnesium Smelters and Casters	-	-	-	-	-	-	-	13.3	13.3
d.	Production and Consumption of Halocarbons and SF ₆ ⁴	-	-	-	-	-	1 600	-	49	1 700
e.	Other & Undifferentiated Production	1 400	-	-	-	-	-	-	-	1 400
	SOLVENT & OTHER PRODUCT USE	-	-	-	0.23	72	-	-	-	72
	AGRICULTURE	-	140	2 900	10	4 000	-	-	-	7 400
a.	Enteric Fermentation	-	100	2 200	-	-	-	-	-	2 200
b.	Manure Management	-	35	730	1.67	519	-	-	-	1 300
c.	Agriculture Soils	-	-	-	13	4 000	-	-	-	4 000
	Direct Sources	-	-	-	7.4	2 300	-	-	-	2 300
	Pasture, Range and Paddock Manure	-	-	-	0.73	230	-	-	-	230
	Indirect Sources	-	-	-	5	1 000	-	-	-	1 000
d.	Field Burning of Agricultural Residues	-	0.01	0.1	0.0	0.05	-	-	-	0.2
	WASTE	180	190	3 900	0.8	200	-	-	-	4 300
a.	Solid Waste Disposal on Land	-	180	3 800	-	-	-	-	-	3 800
b.	Wastewater Handling	-	4.1	86	0.5	200	-	-	-	240
c.	Waste Incineration	180	0.1	2	0.3	80	-	-	-	270

Notes:

- Emissions from ethanol and biodiesel are included in the Transport categories using gasoline and diesel respectively.
 - Emissions associated with the consumption of PFCs and SF₆ (except for electric utilities) are only reported at the national level.
 - Emissions from the Ammonia Production, Nitric Acid Production and Petrochemical Production subcategories are included in Other & Undifferentiated Production within the provincial/territorial tables.
 - Only SF₆ emissions from electrical equipment are included. SF₆ emission estimates for semi-conductor manufacturing are only available at the national level.
- Indicates no emissions
0.0 Indicates emissions truncated due to rounding
x Indicates data has been suppressed to respect confidentiality
Note that the 2012 estimates are based on preliminary energy data; these data, though the best available information at the time of publication, are subject to revision in the next submission year.

Table A11-12 1990-2012 GHG Emission Summary for Ontario

Greenhouse Gas Categories		1990	2000	2005	2008	2009	2010	2011	2012
<i>kt CO₂ equivalent</i>									
TOTAL		177 000	206 000	207 000	192 000	168 000	175 000	171 000	167 000
ENERGY		131 000	165 000	161 000	148 000	129 000	135 000	133 000	127 000
a.	Stationary Combustion Sources	81 700	104 000	95 300	87 000	69 000	72 700	70 900	67 600
	Electricity and Heat Generation	25 500	43 000	34 100	27 100	14 800	19 600	14 100	14 500
	Fossil Fuel Production and Refining	6 200	6 800	7 000	7 000	6 400	6 600	6 100	5 900
	Mining & Oil and Gas Extraction	491	466	586	656	644	635	730	747
	Manufacturing Industries	21 800	20 200	18 900	17 800	15 000	14 900	16 100	15 800
	Construction	568	437	633	545	459	549	409	426
	Commercial & Institutional	9 090	13 000	12 700	11 900	11 300	10 800	11 700	10 800
	Residential	17 200	19 000	20 400	20 700	19 300	18 500	20 000	17 800
	Agriculture & Forestry	770	902	1 030	1 210	1 030	1 090	1 630	1 670
b.	Transport ¹	47 800	59 800	64 200	59 000	58 400	60 700	60 400	57 400
	Civil Aviation (Domestic Aviation)	2 300	2 300	2 200	2 100	1 900	1 900	1 800	1 800
	Road Transportation	34 900	42 000	47 000	45 000	45 400	46 200	45 500	44 400
	Light-Duty Gasoline Vehicles	18 600	16 700	16 400	15 500	15 900	16 000	15 600	15 000
	Light-Duty Gasoline Trucks	7 470	13 500	16 600	15 600	16 000	16 200	15 700	15 100
	Heavy-Duty Gasoline Vehicles	1 610	1 090	1 340	1 320	1 370	1 400	1 380	1 340
	Motorcycles	43.9	39.7	66.3	65.1	67.7	69.4	68.3	66.4
	Light-Duty Diesel Vehicles	150	157	195	228	250	272	289	299
	Light-Duty Diesel Trucks	142	356	419	418	427	434	425	413
	Heavy-Duty Diesel Vehicles	6 390	9 800	11 600	11 400	11 000	11 400	11 500	11 700
	Propane & Natural Gas Vehicles	540	380	350	450	400	420	450	510
	Railways	1 800	1 700	1 600	1 500	1 200	1 300	1 300	1 300
	Navigation (Domestic Marine)	940	800	870	950	610	1 100	790	1 000
	Other Transportation	7 800	13 000	13 000	9 400	9 300	10 000	11 000	9 000
	Off-Road Gasoline	2 300	3 700	3 600	2 700	3 000	3 400	3 200	1 700
	Off-Road Diesel	3 300	5 700	5 900	5 100	5 100	6 000	6 900	6 400
	Pipelines	2 260	3 610	3 040	1 680	1 210	889	888	847
c.	Fugitive Sources	1 200	1 500	1 600	1 600	1 600	1 500	1 500	1 500
	Coal Mining	-	-	-	-	-	-	-	-
	Oil and Natural Gas	1 200	1 500	1 600	1 600	1 600	1 500	1 500	1 500
INDUSTRIAL PROCESSES²		30 500	24 100	28 100	27 600	21 000	22 600	21 500	23 300
a.	Mineral Products	4 000	4 800	4 700	4 300	3 200	3 400	3 500	3 700
	Cement Production	2 300	3 300	3 500	3 100	2 300	2 600	2 600	2 800
	Lime Production	1 090	906	797	749	519	572	596	600
	Mineral Products Use	620	550	380	420	330	240	310	310
b.	Chemical Industry ³	11 000	900	2 600	2 400	660	0.2	0.21	0.21
	Adipic Acid Production	11 000	900	2 600	2 400	660	0.2	0.21	0.21
c.	Metal Production	10 900	13 000	11 400	11 100	8 180	9 170	10 000	10 100
	Iron and Steel Production	10 200	11 500	10 200	10 600	8 000	8 990	9 820	9 810
	Aluminum Production	-	-	-	-	-	-	-	-
	SF ₆ Used in Magnesium Smelters and Casters	720	1 520	1 180	424	172	176	186	243
d.	Production and Consumption of Halocarbons and SF ₆ ⁴	850	1 200	2 100	2 100	2 400	2 700	2 900	3 100
e.	Other & Undifferentiated Production	4 000	4 200	7 300	7 700	6 600	7 300	5 200	6 500
SOLVENT & OTHER PRODUCT USE		66	170	150	130	100	93	96	120
AGRICULTURE		10 000	9 600	9 700	9 700	10 000	10 000	9 500	9 400
a.	Enteric Fermentation	3 300	3 200	3 200	2 900	2 800	2 700	2 700	2 700
b.	Manure Management	1 600	1 700	1 700	1 600	1 500	1 500	1 500	1 500
c.	Agriculture Soils	5 100	4 700	4 800	5 200	5 800	6 100	5 400	5 200
	Direct Sources	3 000	2 700	2 700	3 100	3 500	3 800	3 200	3 100
	Pasture, Range and Paddock Manure	300	300	300	280	260	260	250	250
	Indirect Sources	2 000	2 000	2 000	2 000	2 000	2 000	2 000	2 000
d.	Field Burning of Agricultural Residues	3	1	0.5	0.4	0.4	0.4	0.3	0.3
WASTE		6 000	6 700	7 400	7 300	7 300	6 900	7 200	7 500
a.	Solid Waste Disposal on Land	5 500	6 000	6 800	6 700	6 700	6 300	6 600	6 900
b.	Wastewater Handling	230	280	300	310	310	310	310	310
c.	Waste Incineration	260	340	290	300	310	280	270	270

Notes:

1. Emissions from ethanol and biodiesel are included in the Transport categories using gasoline and diesel respectively.
 2. Emissions associated with the consumption of PFCs and SF₆ (except for electric utilities) are only reported at the national level.
 3. Emissions from the Ammonia Production, Nitric Acid Production and Petrochemical Production subcategories are included in Other & Undifferentiated Production within the provincial/territorial tables.
 4. Only SF₆ emissions from electrical equipment are included. SF₆ emission estimates for semi-conductor manufacturing are only available at the national level.
- Indicates no emissions
0.0 Indicates emissions truncated due to rounding
x Indicates data has been suppressed to respect confidentiality
Note that the 2012 estimates are based on preliminary energy data; these data, though the best available information at the time of publication, are subject to revision in the next submission year.

Table A11–13 2012 GHG Emission Summary for Ontario

Greenhouse Gas Categories		Greenhouse Gases								TOTAL
		CO ₂	CH ₄	CH ₄	N ₂ O	N ₂ O	HFCs	PFCs	SF ₆	
Global Warming Potential		kt	kt	21 kt CO ₂ equivalent	kt	310 kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent
Unit		kt	kt	kt CO ₂ equivalent	kt	kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent
TOTAL		142 000	580	12 000	29	9 000	3 000	-	300	167 000
ENERGY		122 000	95	2 000	8	2 000	-	-	-	127 000
a.	Stationary Combustion Sources	66 500	30	600	2	600	-	-	-	67 600
	Electricity and Heat Generation	14 300	2.7	56	0.3	100	-	-	-	14 500
	Fossil Fuel Production and Refining	5 900	0.06	1	0.04	10	-	-	-	5 900
	Mining & Oil and Gas Extraction	736	0.01	0.25	0.03	10	-	-	-	747
	Manufacturing Industries	15 600	0.6	10	0.5	100	-	-	-	15 800
	Construction	422	0.01	0.14	0.01	4	-	-	-	426
	Commercial & Institutional	10 700	0.21	4.4	0.3	80	-	-	-	10 800
	Residential	17 100	30	500	0.6	200	-	-	-	17 800
	Agriculture & Forestry	1 650	0.03	0.64	0.05	14	-	-	-	1 670
b.	Transport ¹	55 400	7	100	6	2 000	-	-	-	57 400
	Civil Aviation (Domestic Aviation)	1 780	0.06	1	0.05	20	-	-	-	1 800
	Road Transportation	43 400	3	70	3.1	970	-	-	-	44 400
	Light-Duty Gasoline Vehicles	14 600	1.2	25	1.2	360	-	-	-	15 000
	Light-Duty Gasoline Trucks	14 800	1.1	24	1.1	340	-	-	-	15 100
	Heavy-Duty Gasoline Vehicles	1 300	0.05	1	0.12	37	-	-	-	1 340
	Motorcycles	65.3	0.03	0.69	0.0	0.41	-	-	-	66.4
	Light-Duty Diesel Vehicles	291	0.01	0.1	0.02	7	-	-	-	299
	Light-Duty Diesel Trucks	402	0.01	0.2	0.03	10	-	-	-	413
	Heavy-Duty Diesel Vehicles	11 500	0.5	10	0.7	200	-	-	-	11 700
	Propane & Natural Gas Vehicles	504	0.4	8	0.01	3	-	-	-	510
	Railways	1 100	0.06	1	0.5	100	-	-	-	1 300
	Navigation (Domestic Marine)	965	0.08	2	0.1	30	-	-	-	1 000
	Other Transportation	8 140	3	70	2	800	-	-	-	9 000
	Off-Road Gasoline	1 650	2	40	0.04	10	-	-	-	1 700
	Off-Road Diesel	5 670	0.3	7	2	700	-	-	-	6 400
	Pipelines	823	0.81	17	0.02	7	-	-	-	847
c.	Fugitive Sources	270	59	1 200	0.02	7	-	-	-	1 500
	Coal Mining	-	-	-	-	-	-	-	-	-
	Oil and Natural Gas	270	59	1 200	0.02	7	-	-	-	1 500
	INDUSTRIAL PROCESSES²	20 000	-	-	0.0	0.21	3 000	-	300	23 300
a.	Mineral Products	3 700	-	-	-	-	-	-	-	3 700
	Cement Production	2 800	-	-	-	-	-	-	-	2 800
	Lime Production	600	-	-	-	-	-	-	-	600
	Mineral Product Use	310	-	-	-	-	-	-	-	310
b.	Chemical Industry ³	-	-	-	0.0	0.21	-	-	-	0.21
	Adipic Acid Production	-	-	-	0.0	0.21	-	-	-	0.21
c.	Metal Production	9 810	-	-	-	-	-	-	243	10 100
	Iron and Steel Production	9 810	-	-	-	-	-	-	-	9 810
	Aluminum Production	-	-	-	-	-	-	-	-	-
	SF ₆ Used in Magnesium Smelters and Casters	-	-	-	-	-	-	-	243	243
d.	Production and Consumption of Halocarbons and SF ₆ ⁴	-	-	-	-	-	3 000	-	59	3 100
e.	Other & Undifferentiated Production	6 500	-	-	-	-	-	-	-	6 500
	SOLVENT & OTHER PRODUCT USE	-	-	-	0.39	120	-	-	-	120
	AGRICULTURE	-	160	3 400	20	6 000	-	-	-	9 400
a.	Enteric Fermentation	-	130	2 700	-	-	-	-	-	2 700
b.	Manure Management	-	32	680	2.57	798	-	-	-	1 500
c.	Agriculture Soils	-	-	-	17	5 200	-	-	-	5 200
	Direct Sources	-	-	-	10	3 100	-	-	-	3 100
	Pasture, Range and Paddock Manure	-	-	-	0.82	250	-	-	-	250
	Indirect Sources	-	-	-	6	2 000	-	-	-	2 000
d.	Field Burning of Agricultural Residues	-	0.01	0.2	0.0	0.09	-	-	-	0.3
	WASTE	190	330	6 900	1	300	-	-	-	7 500
a.	Solid Waste Disposal on Land	-	330	6 900	-	-	-	-	-	6 900
b.	Wastewater Handling	-	2.4	50	0.9	300	-	-	-	310
c.	Waste Incineration	190	0.01	0.2	0.3	80	-	-	-	270

Notes:

1. Emissions from ethanol and biodiesel are included in the Transport categories using gasoline and diesel respectively.

2. Emissions associated with the consumption of PFCs and SF₆ (except for electric utilities) are only reported at the national level.

3. Emissions from the Ammonia Production, Nitric Acid Production and Petrochemical Production subcategories are included in Other & Undifferentiated Production within the provincial/territorial tables.

4. Only SF₆ emissions from electrical equipment are included. SF₆ emission estimates for semi-conductor manufacturing are only available at the national level.

- Indicates no emissions

0.0 Indicates emissions truncated due to rounding

x Indicates data has been suppressed to respect confidentiality

Note that the 2012 estimates are based on preliminary energy data; these data, though the best available information at the time of publication, are subject to revision in the next submission year.

Table A11-14 1990-2012 GHG Emission Summary for Manitoba

Greenhouse Gas Categories		1990	2000	2005	2008	2009	2010	2011	2012
<i>kt CO₂ equivalent</i>									
TOTAL		18 700	21 400	20 900	21 700	20 300	20 200	19 700	21 100
ENERGY		12 400	13 200	12 700	12 700	11 900	11 600	11 800	12 800
a.	Stationary Combustion Sources	4 900	5 420	4 530	4 990	4 550	3 900	3 880	3 860
	Electricity and Heat Generation	517	999	334	414	190	86.6	118	112
	Fossil Fuel Production and Refining	4	0.39	0.46	0.46	0.31	0.31	0.46	0.46
	Mining & Oil and Gas Extraction	75.5	21.5	114	316	265	174	102	110
	Manufacturing Industries	1 180	1 230	1 420	1 480	1 430	1 250	1 210	1 250
	Construction	63.1	61.6	85.4	99.2	76.2	106	113	108
	Commercial & Institutional	1 400	1 660	1 420	1 490	1 380	1 200	1 220	1 180
	Residential	1 630	1 380	1 110	1 140	1 090	1 010	1 080	1 060
	Agriculture & Forestry	42.3	63.4	45.3	62.5	113	79.1	37.5	42.4
b.	Transport ¹	7 140	7 240	7 630	7 130	6 700	7 000	7 190	8 100
	Civil Aviation (Domestic Aviation)	480	560	570	530	460	470	430	410
	Road Transportation	3 750	4 410	4 670	4 840	4 860	5 160	5 070	5 500
	Light-Duty Gasoline Vehicles	1 610	1 310	1 140	1 080	1 080	1 150	1 110	1 270
	Light-Duty Gasoline Trucks	847	1 480	1 630	1 540	1 540	1 650	1 590	1 820
	Heavy-Duty Gasoline Vehicles	341	212	229	224	227	246	241	278
	Motorcycles	7.08	4.39	8.22	8.01	8.13	8.81	8.63	9.95
	Light-Duty Diesel Vehicles	14.5	10.6	11	12.7	13.5	15.2	15.6	18.2
	Light-Duty Diesel Trucks	40.1	90	100	108	110	119	117	132
	Heavy-Duty Diesel Vehicles	828	1 260	1 540	1 860	1 870	1 960	1 970	1 970
	Propane & Natural Gas Vehicles	61	36	14	20	17	13	10	12
	Railways	610	320	300	280	530	x	x	x
	Navigation (Domestic Marine)	0.02	1.2	2.4	2.4	5.9	x	x	x
	Other Transportation	2 300	1 900	2 100	1 500	860	750	1 000	1 600
	Off-Road Gasoline	460	430	370	310	320	440	340	630
	Off-Road Diesel	1 000	690	1 100	930	430	290	630	920
	Pipelines	841	822	596	244	102	17.8	32.1	19
c.	Fugitive Sources	390	510	560	620	620	680	730	800
	Coal Mining	-	-	-	-	-	-	-	-
	Oil and Natural Gas	390	510	560	620	620	680	730	800
INDUSTRIAL PROCESSES²		546	762	843	834	876	1 020	1 080	1 150
a.	Mineral Products	210	79	69	63	55	60	64	59
	Cement Production	140	-	-	-	-	-	-	-
	Lime Production	58.1	68.9	58.8	51	44.7	53.6	55.8	56.2
	Mineral Products Use	11	11	10	12	10	6.4	8.1	2.7
b.	Chemical Industry ³	-	-	-	-	-	-	-	-
	Adipic Acid Production	-	-	-	-	-	-	-	-
c.	Metal Production	-	-	-	-	-	-	-	-
	Iron and Steel Production	-	-	-	-	-	-	-	-
	Aluminum Production	-	-	-	-	-	-	-	-
	SF ₆ Used in Magnesium Smelters and Casters	-	-	-	-	-	-	-	-
d.	Production and Consumption of Halocarbons and SF ₆ ⁴	4.5	120	200	200	230	260	270	280
e.	Other & Undifferentiated Production	330	560	570	570	590	700	750	810
SOLVENT & OTHER PRODUCT USE		7.1	17	14	12	9.4	8.7	8.9	11
AGRICULTURE		5 100	6 700	6 500	7 200	6 700	6 700	5 900	6 300
a.	Enteric Fermentation	1 300	1 800	2 200	2 000	1 900	1 800	1 700	1 600
b.	Manure Management	380	570	700	640	620	620	600	610
c.	Agriculture Soils	3 300	4 200	3 600	4 600	4 200	4 300	3 700	4 000
	Direct Sources	1 800	2 200	1 700	2 400	2 100	2 200	1 900	2 100
	Pasture, Range and Paddock Manure	310	460	550	500	470	440	400	400
	Indirect Sources	1 000	2 000	1 000	2 000	2 000	2 000	1 000	2 000
d.	Field Burning of Agricultural Residues	100	80	10	20	20	10	9	20
WASTE		600	760	830	870	880	890	910	920
a.	Solid Waste Disposal on Land	560	720	790	830	840	850	870	880
b.	Wastewater Handling	34	38	39	39	40	40	40	41
c.	Waste Incineration	-	-	-	-	-	-	-	-

Notes:

1. Emissions from ethanol and biodiesel are included in the Transport categories using gasoline and diesel respectively.
 2. Emissions associated with the consumption of PFCs and SF₆ (except for electric utilities) are only reported at the national level.
 3. Emissions from the Ammonia Production, Nitric Acid Production and Petrochemical Production subcategories are included in Other & Undifferentiated Production within the provincial/territorial tables.
 4. Only SF₆ emissions from electrical equipment are included. SF₆ emission estimates for semi-conductor manufacturing are only available at the national level.
- Indicates no emissions
0.0 Indicates emissions truncated due to rounding
x Indicates data has been suppressed to respect confidentiality
Note that the 2012 estimates are based on preliminary energy data; these data, though the best available information at the time of publication, are subject to revision in the next submission year.

Table A11–15 2012 GHG Emission Summary for Manitoba

Greenhouse Gas Categories		Greenhouse Gases								
		CO ₂	CH ₄	CH ₄	N ₂ O	N ₂ O	HFCs	PFCs	SF ₆	TOTAL
Global Warming Potential		kt	kt	21 kt CO ₂ equivalent	kt	310 kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent
Unit		kt	kt	kt CO ₂ equivalent	kt	kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent
TOTAL		12 500	180	3 700	15	4 600	270	-	1.4	21 100
ENERGY		11 700	37	770	1	300	-	-	-	12 800
a.	Stationary Combustion Sources	3 770	3	60	0.1	40	-	-	-	3 860
	Electricity and Heat Generation	111	0.01	0.15	0.0	1	-	-	-	112
	Fossil Fuel Production and Refining	0.45	0.0	0.0	0.0	0.01	-	-	-	0.46
	Mining & Oil and Gas Extraction	107	0.0	0.03	0.01	2	-	-	-	110
	Manufacturing Industries	1 230	0.05	1	0.04	10	-	-	-	1 250
	Construction	108	0.0	0.04	0.0	0.7	-	-	-	108
	Commercial & Institutional	1 170	0.02	0.48	0.03	8	-	-	-	1 180
	Residential	993	3	60	0.05	20	-	-	-	1 060
	Agriculture & Forestry	41.5	0.0	0.01	0.0	0.87	-	-	-	42.4
b.	Transport ¹	7 780	1	30	1	300	-	-	-	8 100
	Civil Aviation (Domestic Aviation)	410	0.03	0.7	0.01	4	-	-	-	410
	Road Transportation	5 380	0.4	9	0.36	110	-	-	-	5 500
	Light-Duty Gasoline Vehicles	1 230	0.13	2.8	0.09	29	-	-	-	1 270
	Light-Duty Gasoline Trucks	1 780	0.19	4.1	0.12	38	-	-	-	1 820
	Heavy-Duty Gasoline Vehicles	270	0.01	0.27	0.02	7	-	-	-	278
	Motorcycles	9.82	0.0	0.08	0.0	0.06	-	-	-	9.95
	Light-Duty Diesel Vehicles	17.8	0.0	0.01	0.0	0.5	-	-	-	18.2
	Light-Duty Diesel Trucks	129	0.0	0.07	0.01	3	-	-	-	132
	Heavy-Duty Diesel Vehicles	1 930	0.08	2	0.1	30	-	-	-	1 970
	Propane & Natural Gas Vehicles	12.2	0.01	0.1	0.0	0.07	-	-	-	12
	Railways	x	x	x	x	x	-	-	-	x
	Navigation (Domestic Marine)	x	x	x	x	x	-	-	-	x
	Other Transportation	1 440	0.8	20	0.4	100	-	-	-	1 600
	Off-Road Gasoline	610	0.8	20	0.01	5	-	-	-	630
	Off-Road Diesel	808	0.05	1	0.3	100	-	-	-	920
	Pipelines	18.4	0.01	0.28	0.0	0.4	-	-	-	19
c.	Fugitive Sources	120	33	680	-	-	-	-	-	800
	Coal Mining	-	-	-	-	-	-	-	-	-
	Oil and Natural Gas	120	33	680	-	-	-	-	-	800
INDUSTRIAL PROCESSES²		870	-	-	-	-	270	-	1.4	1 150
a.	Mineral Products	59	-	-	-	-	-	-	-	59
	Cement Production	-	-	-	-	-	-	-	-	-
	Lime Production	56.2	-	-	-	-	-	-	-	56.2
	Mineral Product Use	2.7	-	-	-	-	-	-	-	2.7
b.	Chemical Industry ³	-	-	-	-	-	-	-	-	-
	Adipic Acid Production	-	-	-	-	-	-	-	-	-
c.	Metal Production	-	-	-	-	-	-	-	-	-
	Iron and Steel Production	-	-	-	-	-	-	-	-	-
	Aluminum Production	-	-	-	-	-	-	-	-	-
	SF ₆ Used in Magnesium Smelters and Casters	-	-	-	-	-	-	-	-	-
d.	Production and Consumption of Halocarbons and SF ₆ ⁴	-	-	-	-	-	270	-	1.4	280
e.	Other & Undifferentiated Production	810	-	-	-	-	-	-	-	810
SOLVENT & OTHER PRODUCT USE		-	-	-	0.04	11	-	-	-	11
AGRICULTURE		-	96	2 000	10	4 000	-	-	-	6 300
a.	Enteric Fermentation	-	78	1 600	-	-	-	-	-	1 600
b.	Manure Management	-	17	360	0.79	244	-	-	-	610
c.	Agriculture Soils	-	-	-	13	4 000	-	-	-	4 000
	Direct Sources	-	-	-	6.7	2 100	-	-	-	2 100
	Pasture, Range and Paddock Manure	-	-	-	1.3	400	-	-	-	400
	Indirect Sources	-	-	-	5	2 000	-	-	-	2 000
d.	Field Burning of Agricultural Residues	-	0.5	10	0.01	4	-	-	-	20
WASTE		-	43	890	0.08	20	-	-	-	920
a.	Solid Waste Disposal on Land	-	42	880	-	-	-	-	-	880
b.	Wastewater Handling	-	0.77	16	0.08	20	-	-	-	41
c.	Waste Incineration	-	-	-	-	-	-	-	-	-

Notes:

1. Emissions from ethanol and biodiesel are included in the Transport categories using gasoline and diesel respectively.

2. Emissions associated with the consumption of PFCs and SF₆ (except for electric utilities) are only reported at the national level.

3. Emissions from the Ammonia Production, Nitric Acid Production and Petrochemical Production subcategories are included in Other & Undifferentiated Production within the provincial/territorial tables.

4. Only SF₆ emissions from electrical equipment are included. SF₆ emission estimates for semi-conductor manufacturing are only available at the national level.

- Indicates no emissions

0.0 Indicates emissions truncated due to rounding

x Indicates data has been suppressed to respect confidentiality

Note that the 2012 estimates are based on preliminary energy data; these data, though the best available information at the time of publication, are subject to revision in the next submission year.

Table A11-16 1990-2012 GHG Emission Summary for Saskatchewan

Greenhouse Gas Categories		1990	2000	2005	2008	2009	2010	2011	2012
<i>kt CO₂ equivalent</i>									
TOTAL		43 500	66 100	71 100	73 600	73 100	73 100	72 700	74 800
ENERGY		34 800	53 200	56 400	58 700	59 200	59 900	59 100	60 200
a.	Stationary Combustion Sources	20 000	26 700	28 000	28 700	29 800	30 000	29 600	29 300
	Electricity and Heat Generation	11 100	14 400	15 200	15 200	16 300	16 100	15 500	15 800
	Fossil Fuel Production and Refining	3 700	5 300	6 500	6 100	6 200	6 400	6 400	6 100
	Mining & Oil and Gas Extraction	971	2 010	2 350	3 090	2 750	3 000	3 200	3 050
	Manufacturing Industries	788	1 100	529	672	553	624	701	793
	Construction	70	48.9	41.8	72.3	48.8	70.4	55.4	37.1
	Commercial & Institutional	980	1 640	1 490	1 330	1 600	1 370	1 270	1 110
	Residential	2 080	1 920	1 610	1 730	1 790	1 940	1 800	1 750
	Agriculture & Forestry	294	271	255	502	529	526	609	655
b.	Transport ¹	9 250	11 100	11 700	13 800	14 100	14 900	14 300	15 100
	Civil Aviation (Domestic Aviation)	260	220	190	200	180	190	180	180
	Road Transportation	4 060	5 640	5 820	6 790	6 980	7 210	7 130	7 510
	Light-Duty Gasoline Vehicles	1 220	1 320	1 070	1 260	1 320	1 360	1 250	1 360
	Light-Duty Gasoline Trucks	893	1 770	1 790	2 110	2 220	2 280	2 110	2 300
	Heavy-Duty Gasoline Vehicles	589	368	356	431	457	475	444	488
	Motorcycles	2.25	6.06	7.24	8.77	9.29	9.68	9.03	9.92
	Light-Duty Diesel Vehicles	10	10.5	11.1	14.7	15.9	17.1	16.6	18.6
	Light-Duty Diesel Trucks	57.9	207	231	290	303	316	298	326
	Heavy-Duty Diesel Vehicles	1 220	1 930	2 340	2 660	2 650	2 740	2 990	3 000
	Propane & Natural Gas Vehicles	65	26	11	11	12	11	10	13
	Railways	590	410	x	x	x	x	x	x
	Navigation (Domestic Marine)	0.1	-	x	x	x	x	x	x
	Other Transportation	4 300	4 800	5 300	6 400	6 600	6 800	6 300	6 800
	Off-Road Gasoline	1 200	680	910	1 200	1 300	1 400	970	1 500
	Off-Road Diesel	1 600	1 800	2 500	2 700	3 000	3 200	3 300	3 300
	Pipelines	1 580	2 320	1 880	2 480	2 270	2 150	2 050	2 020
c.	Fugitive Sources	5 600	15 000	17 000	16 000	15 000	15 000	15 000	16 000
	Coal Mining	10	20	20	20	20	20	20	10
	Oil and Natural Gas	5 600	15 000	17 000	16 000	15 000	15 000	15 000	16 000
INDUSTRIAL PROCESSES²		309	1 260	1 470	1 480	1 350	1 450	1 650	1 460
a.	Mineral Products	95	16	14	13	11	8	10	9.9
	Cement Production	83	-	-	-	-	-	-	-
	Lime Production	-	-	-	-	-	-	-	-
	Mineral Products Use	12	16	14	13	11	8	10	9.9
b.	Chemical Industry ³	-	-	-	-	-	-	-	-
	Adipic Acid Production	-	-	-	-	-	-	-	-
c.	Metal Production	-	-	-	-	-	-	-	-
	Iron and Steel Production	-	-	-	-	-	-	-	-
	Aluminum Production	-	-	-	-	-	-	-	-
	SF ₆ Used in Magnesium Smelters and Casters	-	-	-	-	-	-	-	-
d.	Production and Consumption of Halocarbons and SF ₆ ⁴	1.9	110	180	190	210	240	250	250
e.	Other & Undifferentiated Production	210	1 100	1 300	1 300	1 100	1 200	1 400	1 200
SOLVENT & OTHER PRODUCT USE		6.5	15	12	10	8	7.5	7.7	9.7
AGRICULTURE		7 900	11 000	13 000	13 000	12 000	11 000	11 000	12 000
a.	Enteric Fermentation	2 200	3 100	4 100	3 700	3 400	3 300	3 100	3 200
b.	Manure Management	620	890	1 100	1 000	950	920	880	900
c.	Agriculture Soils	4 900	7 000	7 300	7 900	7 400	6 800	7 200	8 200
	Direct Sources	2 900	3 900	3 900	4 200	4 000	3 600	3 800	4 400
	Pasture, Range and Paddock Manure	390	590	760	700	640	620	580	590
	Indirect Sources	2 000	3 000	3 000	3 000	3 000	3 000	3 000	3 000
d.	Field Burning of Agricultural Residues	60	40	30	20	20	10	20	20
WASTE		490	620	670	690	700	720	730	750
a.	Solid Waste Disposal on Land	450	580	630	650	660	680	690	700
b.	Wastewater Handling	37	39	38	39	39	40	40	41
c.	Waste Incineration	0.52	-	-	-	-	-	-	-

Notes:

1. Emissions from ethanol and biodiesel are included in the Transport categories using gasoline and diesel respectively.
 2. Emissions associated with the consumption of PFCs and SF₆ (except for electric utilities) are only reported at the national level.
 3. Emissions from the Ammonia Production, Nitric Acid Production and Petrochemical Production subcategories are included in Other & Undifferentiated Production within the provincial/territorial tables.
 4. Only SF₆ emissions from electrical equipment are included. SF₆ emission estimates for semi-conductor manufacturing are only available at the national level.
- Indicates no emissions
0.0 Indicates emissions truncated due to rounding
x Indicates data has been suppressed to respect confidentiality
Note that the 2012 estimates are based on preliminary energy data; these data, though the best available information at the time of publication, are subject to revision in the next submission year.

Table A11–17 2012 GHG Emission Summary for Saskatchewan

Greenhouse Gas Categories		Greenhouse Gases								
		CO ₂	CH ₄	CH ₄	N ₂ O	N ₂ O	HFCs	PFCs	SF ₆	TOTAL
Global Warming Potential				21		310				
Unit		kt	kt	kt CO ₂ equivalent	kt	kt CO ₂ equivalent				
TOTAL		45 600	910	19 000	32	9 800	250	-	0.79	74 800
ENERGY		44 400	710	15 000	3	800	-	-	-	60 200
a.	Stationary Combustion Sources	28 800	10	300	0.7	200	-	-	-	29 300
	Electricity and Heat Generation	15 700	0.83	18	0.4	100	-	-	-	15 800
	Fossil Fuel Production and Refining	5 820	10	300	0.1	40	-	-	-	6 100
	Mining & Oil and Gas Extraction	3 020	0.06	1.3	0.08	20	-	-	-	3 050
	Manufacturing Industries	779	0.06	1	0.04	10	-	-	-	793
	Construction	36.8	0.0	0.02	0.0	0.3	-	-	-	37.1
	Commercial & Institutional	1 100	0.02	0.46	0.02	8	-	-	-	1 110
	Residential	1 690	2	40	0.05	20	-	-	-	1 750
	Agriculture & Forestry	650	0.01	0.25	0.01	4.2	-	-	-	655
b.	Transport ¹	14 300	5	100	2	600	-	-	-	15 100
	Civil Aviation (Domestic Aviation)	182	0.02	0.4	0.01	2	-	-	-	180
	Road Transportation	7 350	0.6	10	0.48	150	-	-	-	7 510
	Light-Duty Gasoline Vehicles	1 330	0.16	3.3	0.1	31	-	-	-	1 360
	Light-Duty Gasoline Trucks	2 250	0.27	5.7	0.15	48	-	-	-	2 300
	Heavy-Duty Gasoline Vehicles	476	0.03	0.6	0.04	11	-	-	-	488
	Motorcycles	9.79	0.0	0.08	0.0	0.06	-	-	-	9.92
	Light-Duty Diesel Vehicles	18.1	0.0	0.01	0.0	0.5	-	-	-	18.6
	Light-Duty Diesel Trucks	317	0.01	0.2	0.03	8	-	-	-	326
	Heavy-Duty Diesel Vehicles	2 940	0.1	3	0.2	50	-	-	-	3 000
	Propane & Natural Gas Vehicles	12.5	0.01	0.2	0.0	0.08	-	-	-	13
	Railways	x	x	x	x	x	-	-	-	x
	Navigation (Domestic Marine)	x	x	x	x	x	-	-	-	x
	Other Transportation	6 310	4	90	1	400	-	-	-	6 800
	Off-Road Gasoline	1 450	2	40	0.03	10	-	-	-	1 500
	Off-Road Diesel	2 910	0.2	3	1	400	-	-	-	3 300
	Pipelines	1 960	2	43	0.05	20	-	-	-	2 020
c.	Fugitive Sources	1 300	690	15 000	0.02	6	-	-	-	16 000
	Coal Mining	-	0.7	10	-	-	-	-	-	10
	Oil and Natural Gas	1 300	690	15 000	0.02	6	-	-	-	16 000
INDUSTRIAL PROCESSES²		1 210	-	-	-	-	250	-	0.79	1 460
a.	Mineral Products	9.9	-	-	-	-	-	-	-	9.9
	Cement Production	-	-	-	-	-	-	-	-	-
	Lime Production	-	-	-	-	-	-	-	-	-
	Mineral Product Use	9.9	-	-	-	-	-	-	-	9.9
b.	Chemical Industry ³	-	-	-	-	-	-	-	-	-
	Adipic Acid Production	-	-	-	-	-	-	-	-	-
c.	Metal Production	-	-	-	-	-	-	-	-	-
	Iron and Steel Production	-	-	-	-	-	-	-	-	-
	Aluminum Production	-	-	-	-	-	-	-	-	-
	SF ₆ Used in Magnesium Smelters and Casters	-	-	-	-	-	-	-	-	-
d.	Production and Consumption of Halocarbons and SF ₆ ⁴	-	-	-	-	-	250	-	0.79	250
e.	Other & Undifferentiated Production	1 200	-	-	-	-	-	-	-	1 200
SOLVENT & OTHER PRODUCT USE		-	-	-	0.03	9.7	-	-	-	9.7
AGRICULTURE		-	160	3 500	30	9 000	-	-	-	12 000
a.	Enteric Fermentation	-	150	3 200	-	-	-	-	-	3 200
b.	Manure Management	-	12	240	2.13	662	-	-	-	900
c.	Agriculture Soils	-	-	-	27	8 200	-	-	-	8 200
	Direct Sources	-	-	-	14	4 400	-	-	-	4 400
	Pasture, Range and Paddock Manure	-	-	-	1.9	590	-	-	-	590
	Indirect Sources	-	-	-	10	3 000	-	-	-	3 000
d.	Field Burning of Agricultural Residues	-	0.6	10	0.02	5	-	-	-	20
WASTE		-	35	720	0.07	20	-	-	-	750
a.	Solid Waste Disposal on Land	-	34	700	-	-	-	-	-	700
b.	Wastewater Handling	-	0.94	20	0.07	20	-	-	-	41
c.	Waste Incineration	-	-	-	-	-	-	-	-	-

Notes:

1. Emissions from ethanol and biodiesel are included in the Transport categories using gasoline and diesel respectively.

2. Emissions associated with the consumption of PFCs and SF₆ (except for electric utilities) are only reported at the national level.

3. Emissions from the Ammonia Production, Nitric Acid Production and Petrochemical Production subcategories are included in Other & Undifferentiated Production within the provincial/territorial tables.

4. Only SF₆ emissions from electrical equipment are included. SF₆ emission estimates for semi-conductor manufacturing are only available at the national level.

- Indicates no emissions

0.0 Indicates emissions truncated due to rounding

x Indicates data has been suppressed to respect confidentiality

Note that the 2012 estimates are based on preliminary energy data; these data, though the best available information at the time of publication, are subject to revision in the next submission year.

Table A11-18 1990-2012 GHG Emission Summary for Alberta

Greenhouse Gas Categories								
	1990	2000	2005	2006	2009	2010	2011	2012
<i>kt CO₂ equivalent</i>								
TOTAL	170 000	227 000	232 000	242 000	233 000	241 000	244 000	249 000
ENERGY	148 000	197 000	199 000	209 000	201 000	209 000	212 000	216 000
a. Stationary Combustion Sources	95 800	127 000	128 000	135 000	133 000	136 000	139 000	141 000
Electricity and Heat Generation	39 400	49 800	51 500	52 200	48 400	48 600	48 400	44 200
Fossil Fuel Production and Refining	31 000	44 000	40 000	37 000	37 000	35 000	35 000	38 000
Mining & Oil and Gas Extraction	2 710	7 070	13 800	22 200	23 700	27 100	28 700	33 600
Manufacturing Industries	10 400	11 600	8 950	9 200	9 280	10 400	11 700	10 800
Construction	237	174	169	147	120	162	254	281
Commercial & Institutional	5 020	5 430	5 590	5 590	5 610	5 530	5 880	6 030
Residential	6 720	8 390	7 530	8 770	8 590	8 160	8 640	8 540
Agriculture & Forestry	475	365	239	304	246	194	212	204
b. Transport ¹	22 400	30 500	34 600	38 300	35 300	40 200	39 700	40 200
Civil Aviation (Domestic Aviation)	1 100	1 300	1 400	1 400	1 300	1 300	1 200	1 200
Road Transportation	13 500	16 600	19 500	21 200	21 400	21 800	21 200	22 500
Light-Duty Gasoline Vehicles	4 500	3 740	3 540	3 750	3 690	3 790	3 480	3 730
Light-Duty Gasoline Trucks	3 300	5 530	6 620	6 980	6 870	7 050	6 480	6 960
Heavy-Duty Gasoline Vehicles	1 600	1 200	1 660	1 820	1 810	1 880	1 750	1 900
Motorcycles	24.3	27.1	36.7	40.2	40.1	41.6	38.6	41.8
Light-Duty Diesel Vehicles	32.1	23.3	30.6	35	36.4	39	38.9	43.5
Light-Duty Diesel Trucks	174	461	620	646	642	664	638	691
Heavy-Duty Diesel Vehicles	3 190	5 310	6 890	7 850	8 170	8 270	8 710	9 020
Propane & Natural Gas Vehicles	630	270	120	110	110	83	94	95
Railways	1 800	1 800	x	x	1 300	2 200	x	x
Navigation (Domestic Marine)	0.32	-	x	x	7.8	7.8	x	x
Other Transportation	6 100	11 000	11 000	12 000	11 000	15 000	15 000	13 000
Off-Road Gasoline	1 500	1 400	1 000	920	510	490	410	490
Off-Road Diesel	3 300	6 700	6 700	9 300	9 300	13 000	13 000	11 000
Pipelines	1 290	2 700	3 190	1 850	1 550	1 540	1 670	1 810
c. Fugitive Sources	30 000	39 000	37 000	35 000	34 000	33 000	34 000	35 000
Coal Mining	300	200	200	200	200	200	200	200
Oil and Natural Gas	29 000	39 000	37 000	35 000	33 000	33 000	34 000	35 000
INDUSTRIAL PROCESSES²	7 500	11 200	13 000	13 700	13 300	13 500	14 200	14 600
a. Mineral Products	1 100	1 400	1 400	1 300	1 000	1 100	1 100	1 200
Cement Production	740	960	1 000	1 000	780	860	860	940
Lime Production	104	146	120	104	91.4	110	114	115
Mineral Products Use	210	250	260	200	170	140	160	150
b. Chemical Industry ³	-	-	-	-	-	-	-	-
Adipic Acid Production	-	-	-	-	-	-	-	-
c. Metal Production	-	-	-	-	-	-	-	-
Iron and Steel Production	-	-	-	-	-	-	-	-
Aluminum Production	-	-	-	-	-	-	-	-
SF ₆ Used in Magnesium Smelters and Casters	-	-	-	-	-	-	-	-
d. Production and Consumption of Halocarbons and SF ₆ ⁴	1.7	370	690	770	880	980	1 000	1 000
e. Other & Undifferentiated Production	6 400	9 400	11 000	12 000	11 000	11 000	12 000	12 000
SOLVENT & OTHER PRODUCT USE	16	44	39	37	28	27	27	35
AGRICULTURE	13 000	18 000	18 000	18 000	16 000	16 000	16 000	17 000
a. Enteric Fermentation	5 400	7 700	8 200	7 500	7 100	6 700	6 400	6 600
b. Manure Management	1 300	1 900	2 000	1 800	1 700	1 700	1 600	1 600
c. Agriculture Soils	6 400	7 900	7 700	8 300	7 500	8 000	8 300	8 700
Direct Sources	3 500	3 900	3 700	4 200	3 700	4 100	4 300	4 500
Pasture, Range and Paddock Manure	740	1 200	1 300	1 200	1 100	1 000	980	1 000
Indirect Sources	2 000	3 000	3 000	3 000	3 000	3 000	3 000	3 000
d. Field Burning of Agricultural Residues	4	0.2	0.7	0.4	0.3	0.4	0.6	0.5
WASTE	1 000	1 200	1 500	1 600				
a. Solid Waste Disposal on Land	960	1 100	1 400	1 500	1 500	1 500	1 500	1 500
b. Wastewater Handling	66	84	93	100	100	100	100	110
c. Waste Incineration	11	33	33	22	7.5	17	22	22

Notes:

- Emissions from ethanol and biodiesel are included in the Transport categories using gasoline and diesel respectively.
 - Emissions associated with the consumption of PFCs and SF₆ (except for electric utilities) are only reported at the national level.
 - Emissions from the Ammonia Production, Nitric Acid Production and Petrochemical Production subcategories are included in Other & Undifferentiated Production within the provincial/territorial tables.
 - Only SF₆ emissions from electrical equipment are included. SF₆ emission estimates for semi-conductor manufacturing are only available at the national level.
- Indicates no emissions
0.0 Indicates emissions truncated due to rounding
x Indicates data has been suppressed to respect confidentiality
Note that the 2012 estimates are based on preliminary energy data; these data, though the best available information at the time of publication, are subject to revision in the next submission year.

Table A11–19 2012 GHG Emission Summary for Alberta

Greenhouse Gas Categories		Greenhouse Gases								TOTAL
		CO ₂	CH ₄	CH ₄	N ₂ O	N ₂ O	HFCs	PFCs	SF ₆	
Global Warming Potential		kt	kt	21 kt CO ₂ equivalent	kt	310 kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent
Unit		kt	kt	kt CO ₂ equivalent	kt	kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent
TOTAL		200 000	1 700	36 000	42	13 000	1 000	-	3.3	249 000
ENERGY		186 000	1 300	27 000	10	3 000	-	-	-	216 000
a.	Stationary Combustion Sources	139 000	60	1 000	3	900	-	-	-	141 000
	Electricity and Heat Generation	43 900	2	42	0.8	300	-	-	-	44 200
	Fossil Fuel Production and Refining	36 200	60	1 000	0.7	200	-	-	-	38 000
	Mining & Oil and Gas Extraction	33 400	0.63	13	0.7	200	-	-	-	33 600
	Manufacturing Industries	10 600	0.4	9	0.4	100	-	-	-	10 800
	Construction	277	0.0	0.1	0.01	3	-	-	-	281
	Commercial & Institutional	5 980	0.11	2.4	0.1	50	-	-	-	6 030
	Residential	8 470	0.6	10	0.2	50	-	-	-	8 540
	Agriculture & Forestry	203	0.0	0.08	0.01	1.5	-	-	-	204
b.	Transport ¹	38 000	5	100	7	2 000	-	-	-	40 200
	Civil Aviation (Domestic Aviation)	1 210	0.09	2	0.04	10	-	-	-	1 200
	Road Transportation	22 000	2	30	1.4	430	-	-	-	22 500
	Light-Duty Gasoline Vehicles	3 650	0.38	7.9	0.26	79	-	-	-	3 730
	Light-Duty Gasoline Trucks	6 820	0.68	14	0.41	130	-	-	-	6 960
	Heavy-Duty Gasoline Vehicles	1 850	0.07	1.5	0.16	49	-	-	-	1 900
	Motorcycles	41.3	0.02	0.31	0.0	0.24	-	-	-	41.8
	Light-Duty Diesel Vehicles	42.4	0.0	0.02	0.0	1	-	-	-	43.5
	Light-Duty Diesel Trucks	674	0.02	0.4	0.06	20	-	-	-	691
	Heavy-Duty Diesel Vehicles	8 860	0.4	8	0.5	200	-	-	-	9 020
	Propane & Natural Gas Vehicles	92.5	0.1	2	0.0	0.6	-	-	-	95
	Railways	x	x	x	x	x	-	-	-	x
	Navigation (Domestic Marine)	x	x	x	x	x	-	-	-	x
	Other Transportation	12 000	3	60	4	1 000	-	-	-	13 000
	Off-Road Gasoline	474	0.6	10	0.01	3	-	-	-	490
	Off-Road Diesel	9 780	0.5	10	4	1 000	-	-	-	11 000
	Pipelines	1 760	1.7	36	0.05	10	-	-	-	1 810
c.	Fugitive Sources	9 000	1 200	26 000	0.04	10	-	-	-	35 000
	Coal Mining	-	8	200	-	-	-	-	-	200
	Oil and Natural Gas	9 000	1 200	26 000	0.04	10	-	-	-	35 000
	INDUSTRIAL PROCESSES²	13 600	-	-	-	-	1 000	-	3.3	14 600
a.	Mineral Products	1 200	-	-	-	-	-	-	-	1 200
	Cement Production	940	-	-	-	-	-	-	-	940
	Lime Production	115	-	-	-	-	-	-	-	115
	Mineral Product Use	150	-	-	-	-	-	-	-	150
b.	Chemical Industry ³	-	-	-	-	-	-	-	-	-
	Adipic Acid Production	-	-	-	-	-	-	-	-	-
c.	Metal Production	-	-	-	-	-	-	-	-	-
	Iron and Steel Production	-	-	-	-	-	-	-	-	-
	Aluminum Production	-	-	-	-	-	-	-	-	-
	SF ₆ Used in Magnesium Smelters and Casters	-	-	-	-	-	-	-	-	-
d.	Production and Consumption of Halocarbons and SF ₆ ⁴	-	-	-	-	-	1 000	-	3.3	1 000
e.	Other & Undifferentiated Production	12 000	-	-	-	-	-	-	-	12 000
	SOLVENT & OTHER PRODUCT USE	-	-	-	0.11	35	-	-	-	35
	AGRICULTURE	-	340	7 000	30	10 000	-	-	-	17 000
a.	Enteric Fermentation	-	310	6 600	-	-	-	-	-	6 600
b.	Manure Management	-	23	480	3.73	1 160	-	-	-	1 600
c.	Agriculture Soils	-	-	-	28	8 700	-	-	-	8 700
	Direct Sources	-	-	-	15	4 500	-	-	-	4 500
	Pasture, Range and Paddock Manure	-	-	-	3.3	1 000	-	-	-	1 000
	Indirect Sources	-	-	-	10	3 000	-	-	-	3 000
d.	Field Burning of Agricultural Residues	-	0.02	0.4	0.0	0.1	-	-	-	0.5
	WASTE	14	73	1 500	0.3	80	-	-	-	1 600
a.	Solid Waste Disposal on Land	-	71	1 500	-	-	-	-	-	1 500
b.	Wastewater Handling	-	1.4	30	0.2	80	-	-	-	110
c.	Waste Incineration	14	0.0	0.03	0.03	8	-	-	-	22

Notes:

- Emissions from ethanol and biodiesel are included in the Transport categories using gasoline and diesel respectively.
 - Emissions associated with the consumption of PFCs and SF₆ (except for electric utilities) are only reported at the national level.
 - Emissions from the Ammonia Production, Nitric Acid Production and Petrochemical Production subcategories are included in Other & Undifferentiated Production within the provincial/territorial tables.
 - Only SF₆ emissions from electrical equipment are included. SF₆ emission estimates for semi-conductor manufacturing are only available at the national level.
- Indicates no emissions
0.0 Indicates emissions truncated due to rounding
x Indicates data has been suppressed to respect confidentiality
Note that the 2012 estimates are based on preliminary energy data; these data, though the best available information at the time of publication, are subject to revision in the next submission year.

Table A11-20 1990-2012 GHG Emission Summary for British Columbia

Greenhouse Gas Categories								
	1990	2000	2005	2008	2009	2010	2011	2012
<i>kt CO₂ equivalent</i>								
TOTAL	49 400	62 100	62 300	62 900	59 800	59 700	60 100	60 100
ENERGY	41 200	51 500	51 600	52 500	49 700	49 900	50 600	50 500
a. Stationary Combustion Sources	19 000	22 200	21 300	20 800	20 500	19 900	21 400	20 400
Electricity and Heat Generation	803	1 920	1 320	1 470	1 320	1 210	761	494
Fossil Fuel Production and Refining	3 600	3 700	5 600	6 000	6 300	6 400	6 900	6 500
Mining & Oil and Gas Extraction	328	331	280	1 440	1 420	1 620	1 670	1 760
Manufacturing Industries	6 460	7 810	6 340	4 070	4 040	4 060	4 190	4 020
Construction	306	76.2	112	104	62.7	81.5	187	189
Commercial & Institutional	2 840	3 440	3 010	3 090	2 740	2 500	2 820	2 800
Residential	4 330	4 680	4 580	4 560	4 550	3 800	4 590	4 280
Agriculture & Forestry	321	317	72.1	59.9	46.4	305	277	383
b. Transport ¹	18 600	23 900	24 800	25 300	23 200	23 700	22 300	23 300
Civil Aviation (Domestic Aviation)	1 300	1 500	1 500	1 300	1 200	1 200	1 100	1 000
Road Transportation	11 400	14 700	15 400	15 400	15 500	15 500	15 300	14 600
Light-Duty Gasoline Vehicles	3 740	4 380	4 160	4 020	4 090	3 930	3 630	3 600
Light-Duty Gasoline Trucks	2 130	4 450	4 740	4 600	4 690	4 510	4 170	4 140
Heavy-Duty Gasoline Vehicles	2 220	1 810	1 770	1 780	1 830	1 770	1 660	1 660
Motorcycles	19.1	17.5	28.7	28.7	29.6	28.7	26.8	26.7
Light-Duty Diesel Vehicles	34.4	50.8	63.4	70.6	78.1	82.7	80.9	84.1
Light-Duty Diesel Trucks	40.1	72.1	58.5	59.7	63	63.3	58.7	59.3
Heavy-Duty Diesel Vehicles	2 440	3 600	4 380	4 580	4 540	4 860	5 420	4 820
Propane & Natural Gas Vehicles	780	330	190	250	210	220	210	200
Railways	1 400	1 300	430	660	440	510	680	690
Navigation (Domestic Marine)	1 000	1 200	2 500	2 600	2 700	2 700	2 300	2 600
Other Transportation	3 500	5 200	5 000	5 300	3 300	3 900	3 000	4 400
Off-Road Gasoline	350	490	450	350	260	340	420	720
Off-Road Diesel	2 200	3 000	3 600	4 100	2 200	2 700	1 800	2 900
Pipelines	856	1 650	989	895	868	836	806	799
c. Fugitive Sources	3 700	5 300	5 400	6 400	6 100	6 200	6 900	6 800
Coal Mining	700	700	800	700	600	800	800	800
Oil and Natural Gas	3 000	4 700	4 700	5 700	5 500	5 500	6 100	5 900
INDUSTRIAL PROCESSES²	2 670	4 240	4 130	4 010	3 870	3 700	3 480	3 580
a. Mineral Products	850	1 300	1 400	1 300	1 000	1 100	1 100	1 200
Cement Production	610	1 100	1 200	1 100	860	930	940	1 000
Lime Production	162	218	181	157	137	165	172	173
Mineral Products Use	76	64	57	48	38	29	30	26
b. Chemical Industry ³	-	-	-	-	-	-	-	-
Adipic Acid Production	-	-	-	-	-	-	-	-
c. Metal Production	1 510	1 820	1 130	1 150	1 150	785	785	817
Iron and Steel Production	-	-	-	-	-	-	-	-
Aluminum Production	1 510	1 820	1 130	1 150	1 150	785	785	817
SF ₆ Used in Magnesium Smelters and Casters	-	0.72	1.53	2.44	0.6	0.56	0.57	0.54
d. Production and Consumption of Halocarbons and SF ₆ ⁴	60	450	800	870	980	1 100	1 100	1 100
e. Other & Undifferentiated Production	260	630	780	720	710	710	450	400
SOLVENT & OTHER PRODUCT USE	21	59	49	45	34	32	32	41
AGRICULTURE	2 100	2 400	2 600	2 300	2 100	2 100	2 000	2 000
a. Enteric Fermentation	980	1 200	1 300	1 100	990	940	920	930
b. Manure Management	310	380	400	360	350	340	340	340
c. Agriculture Soils	850	850	920	840	790	800	750	730
Direct Sources	390	330	360	350	330	350	330	310
Pasture, Range and Paddock Manure	170	230	250	200	180	170	160	170
Indirect Sources	300	300	300	300	300	300	300	300
d. Field Burning of Agricultural Residues	-	-	-	-	-	-	-	-
WASTE	3 300	3 900	3 900	4 000	4 100	4 000	4 000	3 900
a. Solid Waste Disposal on Land	3 200	3 700	3 700	3 800	3 800	3 800	3 700	3 700
b. Wastewater Handling	92	120	130	130	130	130	130	130
c. Waste Incineration	81	87	85	85	84	84	84	84

Notes:

- Emissions from ethanol and biodiesel are included in the Transport categories using gasoline and diesel respectively.
 - Emissions associated with the consumption of PFCs and SF₆ (except for electric utilities) are only reported at the national level.
 - Emissions from the Ammonia Production, Nitric Acid Production and Petrochemical Production subcategories are included in Other & Undifferentiated Production within the provincial/territorial tables.
 - Only SF₆ emissions from electrical equipment are included. SF₆ emission estimates for semi-conductor manufacturing are only available at the national level.
- Indicates no emissions
0.0 Indicates emissions truncated due to rounding
x Indicates data has been suppressed to respect confidentiality
Note that the 2012 estimates are based on preliminary energy data; these data, though the best available information at the time of publication, are subject to revision in the next submission year.

Table A11–21 2012 GHG Emission Summary for British Columbia

Greenhouse Gas Categories		Greenhouse Gases								
		CO ₂	CH ₄	CH ₄	N ₂ O	N ₂ O	HFCs	PFCs	SF ₆	TOTAL
Global Warming Potential				21		310				
Unit		kt	kt	kt CO ₂ equivalent	kt	kt CO ₂ equivalent				
TOTAL		47 400	420	8 800	7.4	2 300	1 100	440	48	60 100
ENERGY		45 300	190	4 000	4	1 000	-	-	-	50 500
a.	Stationary Combustion Sources	19 500	30	600	1	300	-	-	-	20 400
	Electricity and Heat Generation	487	0.11	2.4	0.01	4	-	-	-	494
	Fossil Fuel Production and Refining	6 100	20	400	0.2	50	-	-	-	6 500
	Mining & Oil and Gas Extraction	1 750	0.03	0.67	0.03	10	-	-	-	1 760
	Manufacturing Industries	3 850	0.7	10	0.5	200	-	-	-	4 020
	Construction	188	0.0	0.07	0.0	1	-	-	-	189
	Commercial & Institutional	2 790	0.05	1.1	0.06	20	-	-	-	2 800
	Residential	3 960	10	300	0.2	60	-	-	-	4 280
	Agriculture & Forestry	381	0.01	0.15	0.01	2.3	-	-	-	383
b.	Transport ¹	22 300	3	70	3	1 000	-	-	-	23 300
	Civil Aviation (Domestic Aviation)	1 040	0.05	1	0.03	9	-	-	-	1 000
	Road Transportation	14 200	1	20	1.3	410	-	-	-	14 600
	Light-Duty Gasoline Vehicles	3 470	0.3	6.3	0.4	120	-	-	-	3 600
	Light-Duty Gasoline Trucks	3 980	0.33	6.9	0.48	150	-	-	-	4 140
	Heavy-Duty Gasoline Vehicles	1 610	0.07	1.4	0.14	42	-	-	-	1 660
	Motorcycles	26.3	0.01	0.27	0.0	0.16	-	-	-	26.7
	Light-Duty Diesel Vehicles	81.9	0.0	0.04	0.01	2	-	-	-	84.1
	Light-Duty Diesel Trucks	57.7	0.0	0.03	0.01	2	-	-	-	59.3
	Heavy-Duty Diesel Vehicles	4 730	0.2	4	0.3	80	-	-	-	4 820
	Propane & Natural Gas Vehicles	198	0.2	5	0.0	1	-	-	-	200
	Railways	608	0.03	0.7	0.3	80	-	-	-	690
	Navigation (Domestic Marine)	2 530	0.2	5	0.4	100	-	-	-	2 600
	Other Transportation	3 990	2	40	1	300	-	-	-	4 400
	Off-Road Gasoline	697	0.9	20	0.02	5	-	-	-	720
	Off-Road Diesel	2 510	0.1	3	1	300	-	-	-	2 900
	Pipelines	777	0.77	16	0.02	6	-	-	-	799
c.	Fugitive Sources	3 500	160	3 300	0.0	1	-	-	-	6 800
	Coal Mining	-	40	800	-	-	-	-	-	800
	Oil and Natural Gas	3 500	120	2 400	0.0	1	-	-	-	5 900
INDUSTRIAL PROCESSES²		1 990	-	-	-	-	1 100	440	48	3 580
a.	Mineral Products	1 200	-	-	-	-	-	-	-	1 200
	Cement Production	1 000	-	-	-	-	-	-	-	1 000
	Lime Production	173	-	-	-	-	-	-	-	173
	Mineral Product Use	26	-	-	-	-	-	-	-	26
b.	Chemical Industry ³	-	-	-	-	-	-	-	-	-
	Adipic Acid Production	-	-	-	-	-	-	-	-	-
c.	Metal Production	372	-	-	-	-	-	444	0.54	817
	Iron and Steel Production	-	-	-	-	-	-	-	-	-
	Aluminum Production	372	-	-	-	-	-	444	-	817
	SF ₆ Used in Magnesium Smelters and Casters	-	-	-	-	-	-	-	0.54	0.54
d.	Production and Consumption of Halocarbons and SF ₆ ⁴	-	-	-	-	-	1 100	-	47	1 100
e.	Other & Undifferentiated Production	400	-	-	-	-	-	-	-	400
SOLVENT & OTHER PRODUCT USE		-	-	-	0.13	41	-	-	-	41
AGRICULTURE		-	52	1 100	3	900	-	-	-	2 000
a.	Enteric Fermentation	-	44	930	-	-	-	-	-	930
b.	Manure Management	-	8.1	170	0.55	172	-	-	-	340
c.	Agriculture Soils	-	-	-	2.3	730	-	-	-	730
	Direct Sources	-	-	-	0.99	310	-	-	-	310
	Pasture, Range and Paddock Manure	-	-	-	0.54	170	-	-	-	170
	Indirect Sources	-	-	-	0.8	300	-	-	-	300
d.	Field Burning of Agricultural Residues	-	-	-	-	-	-	-	-	-
WASTE		73	180	3 800	0.3	100	-	-	-	3 900
a.	Solid Waste Disposal on Land	-	180	3 700	-	-	-	-	-	3 700
b.	Wastewater Handling	-	2.1	44	0.3	90	-	-	-	130
c.	Waste Incineration	73	-	-	0.04	10	-	-	-	84

Notes:

1. Emissions from ethanol and biodiesel are included in the Transport categories using gasoline and diesel respectively.

2. Emissions associated with the consumption of PFCs and SF₆ (except for electric utilities) are only reported at the national level.

3. Emissions from the Ammonia Production, Nitric Acid Production and Petrochemical Production subcategories are included in Other & Undifferentiated Production within the provincial/territorial tables.

4. Only SF₆ emissions from electrical equipment are included. SF₆ emission estimates for semi-conductor manufacturing are only available at the national level.

- Indicates no emissions

0.0 Indicates emissions truncated due to rounding

x Indicates data has been suppressed to respect confidentiality

Note that the 2012 estimates are based on preliminary energy data; these data, though the best available information at the time of publication, are subject to revision in the next submission year.

Table A11-22 1990-2012 GHG Emission Summary for Yukon

Greenhouse Gas Categories		1990	2000	2005	2008	2009	2010	2011	2012
<i>kt CO₂ equivalent</i>									
TOTAL		537	499	457	394	345	341	383	370
ENERGY		534	491	445	381	330	325	365	352
a.	Stationary Combustion Sources	221	249	203	216	134	136	155	132
	Electricity and Heat Generation	93.6	22.1	22.9	18.1	17	18.7	27.6	18.4
	Fossil Fuel Production and Refining	3.1	130	66	46	12	19	13	15
	Mining & Oil and Gas Extraction	5.71	9.04	16.6	25	4.35	5.51	6.32	5.39
	Manufacturing Industries	5.99	-	-	20.4	16.8	14.6	14.6	14.4
	Construction	3.52	2.61	1.57	2.03	1.52	1.81	1.71	1.53
	Commercial & Institutional	76.3	51	35	47.7	53.9	42.7	60.2	54.1
	Residential	32	38.3	52.2	57	28.2	33.3	31.5	23.4
	Agriculture & Forestry	1.08	1.1	8.19	-	-	-	-	-
b.	Transport ¹	312	237	238	161	193	186	207	217
	Civil Aviation (Domestic Aviation)	34	31	34	34	33	38	38	38
	Road Transportation	179	156	144	98.2	119	114	123	129
	Light-Duty Gasoline Vehicles	79.4	47.8	28.7	15.2	19.8	19.4	17.9	19
	Light-Duty Gasoline Trucks	30.4	37.7	30.9	16.5	21.4	20.9	19.4	20.6
	Heavy-Duty Gasoline Vehicles	10	6.39	4.92	2.65	3.5	3.48	3.26	3.51
	Motorcycles	0.5	0.32	0.27	0.15	0.19	0.19	0.18	0.19
	Light-Duty Diesel Vehicles	0.77	0.46	0.31	0.17	0.23	0.24	0.23	0.25
	Light-Duty Diesel Trucks	0.62	2.42	x	x	x	x	x	x
	Heavy-Duty Diesel Vehicles	55.7	60.2	75.6	60.7	71.3	67.1	78.8	82.6
	Propane & Natural Gas Vehicles	1.5	1.1	x	x	x	x	x	x
	Railways	-	-	x	x	x	x	x	x
	Navigation (Domestic Marine)	-	-	x	x	x	x	x	x
	Other Transportation	100	50	60	29	41	35	47	50
	Off-Road Gasoline	10	12	x	x	x	x	x	x
	Off-Road Diesel	89	37	58	28	40	34	x	x
	Pipelines	-	-	x	x	x	x	x	x
c.	Fugitive Sources	-	4	3.9	3.1	2.8	2.9	2.9	2.8
	Coal Mining	-	-	-	-	-	-	-	-
	Oil and Natural Gas	-	4	3.9	3.1	2.8	2.9	2.9	2.8
	INDUSTRIAL PROCESSES²	1.5	5.43	9.42	9.97	11.6	13	14	14.3
a.	Mineral Products	0.13	-	-	-	-	-	-	-
	Cement Production	-	-	-	-	-	-	-	-
	Lime Production	-	-	-	-	-	-	-	-
	Mineral Products Use	0.13	-	-	-	-	-	-	-
b.	Chemical Industry ³	-	-	-	-	-	-	-	-
	Adipic Acid Production	-	-	-	-	-	-	-	-
c.	Metal Production	-	-	-	-	-	-	-	-
	Iron and Steel Production	-	-	-	-	-	-	-	-
	Aluminum Production	-	-	-	-	-	-	-	-
	SF ₆ Used in Magnesium Smelters and Casters	-	-	-	-	-	-	-	-
d.	Production and Consumption of Halocarbons and SF ₆ ⁴	-	4.7	8.9	9.3	11	12	13	13
e.	Other & Undifferentiated Production	1.4	0.69	0.56	0.71	0.71	0.99	1.1	1.1
	SOLVENT & OTHER PRODUCT USE	0.18	0.45	0.37	0.34	0.26	0.25	0.26	0.32
	AGRICULTURE	-	-	-	-	-	-	-	-
a.	Enteric Fermentation	-	-	-	-	-	-	-	-
b.	Manure Management	-	-	-	-	-	-	-	-
c.	Agriculture Soils	-	-	-	-	-	-	-	-
	Direct Sources	-	-	-	-	-	-	-	-
	Pasture, Range and Paddock Manure	-	-	-	-	-	-	-	-
	Indirect Sources	-	-	-	-	-	-	-	-
d.	Field Burning of Agricultural Residues	-	-	-	-	-	-	-	-
	WASTE	1.8	2.5	2.8	2.9	3	3.1	3.2	3.2
a.	Solid Waste Disposal on Land	0.6	1.1	1.4	1.5	1.5	1.6	1.6	1.7
b.	Wastewater Handling	1.2	1.3	1.4	1.4	1.5	1.5	1.5	1.6
c.	Waste Incineration	-	-	-	-	-	-	-	-

Notes:

1. Emissions from ethanol and biodiesel are included in the Transport categories using gasoline and diesel respectively.
 2. Emissions associated with the consumption of PFCs and SF₆ (except for electric utilities) are only reported at the national level.
 3. Emissions from the Ammonia Production, Nitric Acid Production and Petrochemical Production subcategories are included in Other & Undifferentiated Production within the provincial/territorial tables.
 4. Only SF₆ emissions from electrical equipment are included. SF₆ emission estimates for semi-conductor manufacturing are only available at the national level.
- Indicates no emissions
0.0 Indicates emissions truncated due to rounding
x Indicates data has been suppressed to respect confidentiality
Note that the 2012 estimates are based on preliminary energy data; these data, though the best available information at the time of publication, are subject to revision in the next submission year.

Table A11–23 2012 GHG Emission Summary for Yukon

Greenhouse Gas Categories		Greenhouse Gases								
Global Warming Potential		CO ₂	CH ₄	CH ₄	N ₂ O	N ₂ O	HFCs	PFCs	SF ₆	TOTAL
Unit		kt	kt	21 kt CO ₂ equivalent	kt	310 kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent
TOTAL		338	0.31	6.6	0.04	11	13	-	-	370
ENERGY		337	0.19	4	0.03	10	-	-	-	352
a.	Stationary Combustion Sources	126	0.2	4	0.01	2	-	-	-	132
	Electricity and Heat Generation	17.6	0.0	0.02	0.0	0.8	-	-	-	18.4
	Fossil Fuel Production and Refining	13.8	0.04	0.9	0.0	0.1	-	-	-	15
	Mining & Oil and Gas Extraction	5.27	0.0	0.0	0.0	0.1	-	-	-	5.39
	Manufacturing Industries	14.3	0.0	0.0	0.0	0.05	-	-	-	14.4
	Construction	1.51	0.0	0.0	0.0	0.02	-	-	-	1.53
	Commercial & Institutional	53.7	0.0	0.01	0.0	0.4	-	-	-	54.1
	Residential	20.3	0.1	3	0.0	0.5	-	-	-	23.4
	Agriculture & Forestry	-	-	-	-	-	-	-	-	-
b.	Transport ¹	208	0.01	0.3	0.03	8	-	-	-	217
	Civil Aviation (Domestic Aviation)	37.4	0.0	0.05	0.0	0.4	-	-	-	38
	Road Transportation	126	0.01	0.2	0.01	2.3	-	-	-	129
	Light-Duty Gasoline Vehicles	18.6	0.0	0.04	0.0	0.4	-	-	-	19
	Light-Duty Gasoline Trucks	20.2	0.0	0.05	0.0	0.41	-	-	-	20.6
	Heavy-Duty Gasoline Vehicles	3.42	0.0	0.0	0.0	0.09	-	-	-	3.51
	Motorcycles	0.19	0.0	0.0	0.0	0.0	-	-	-	0.19
	Light-Duty Diesel Vehicles	0.24	0.0	0.0	0.0	0.01	-	-	-	0.25
	Light-Duty Diesel Trucks	x	x	x	x	x	-	-	-	x
	Heavy-Duty Diesel Vehicles	81.1	0.0	0.07	0.0	1	-	-	-	82.6
	Propane & Natural Gas Vehicles	x	x	x	x	x	-	-	-	x
	Railways	x	x	x	x	x	-	-	-	x
	Navigation (Domestic Marine)	x	x	x	x	x	-	-	-	x
	Other Transportation	44.5	0.0	0.06	0.02	6	-	-	-	50
	Off-Road Gasoline	x	x	x	x	x	-	-	-	x
	Off-Road Diesel	x	x	x	x	x	-	-	-	x
	Pipelines	x	x	x	x	x	-	-	-	x
c.	Fugitive Sources	2.6	0.01	0.26	-	-	-	-	-	2.8
	Coal Mining	-	-	-	-	-	-	-	-	-
	Oil and Natural Gas	2.6	0.01	0.26	-	-	-	-	-	2.8
	INDUSTRIAL PROCESSES²	1.13	-	-	-	-	13	-	-	14.3
a.	Mineral Products	-	-	-	-	-	-	-	-	-
	Cement Production	-	-	-	-	-	-	-	-	-
	Lime Production	-	-	-	-	-	-	-	-	-
	Mineral Product Use	-	-	-	-	-	-	-	-	-
b.	Chemical Industry ³	-	-	-	-	-	-	-	-	-
	Adipic Acid Production	-	-	-	-	-	-	-	-	-
c.	Metal Production	-	-	-	-	-	-	-	-	-
	Iron and Steel Production	-	-	-	-	-	-	-	-	-
	Aluminum Production	-	-	-	-	-	-	-	-	-
	SF ₆ Used in Magnesium Smelters and Casters	-	-	-	-	-	-	-	-	-
d.	Production and Consumption of Halocarbons and SF ₆ ⁴	-	-	-	-	-	13	-	-	13
e.	Other & Undifferentiated Production	1.1	-	-	-	-	-	-	-	1.1
	SOLVENT & OTHER PRODUCT USE	-	-	-	0.0	0.32	-	-	-	0.32
	AGRICULTURE	-	-	-	-	-	-	-	-	-
a.	Enteric Fermentation	-	-	-	-	-	-	-	-	-
b.	Manure Management	-	-	-	-	-	-	-	-	-
c.	Agriculture Soils	-	-	-	-	-	-	-	-	-
	Direct Sources	-	-	-	-	-	-	-	-	-
	Pasture, Range and Paddock Manure	-	-	-	-	-	-	-	-	-
	Indirect Sources	-	-	-	-	-	-	-	-	-
d.	Field Burning of Agricultural Residues	-	-	-	-	-	-	-	-	-
	WASTE	-	0.12	2.5	0.0	0.7	-	-	-	3.2
a.	Solid Waste Disposal on Land	-	0.08	1.7	-	-	-	-	-	1.7
b.	Wastewater Handling	-	0.04	0.86	0.0	0.7	-	-	-	1.6
c.	Waste Incineration	-	-	-	-	-	-	-	-	-

Notes:

1. Emissions from ethanol and biodiesel are included in the Transport categories using gasoline and diesel respectively.

2. Emissions associated with the consumption of PFCs and SF₆ (except for electric utilities) are only reported at the national level.

3. Emissions from the Ammonia Production, Nitric Acid Production and Petrochemical Production subcategories are included in Other & Undifferentiated Production within the provincial/territorial tables.

4. Only SF₆ emissions from electrical equipment are included. SF₆ emission estimates for semi-conductor manufacturing are only available at the national level.

- Indicates no emissions

0.0 Indicates emissions truncated due to rounding

x Indicates data has been suppressed to respect confidentiality

Note that the 2012 estimates are based on preliminary energy data; these data, though the best available information at the time of publication, are subject to revision in the next submission year.

Table A11-24 1999-2012 GHG Emission Summary for Northwest Territories

Greenhouse Gas Categories								
	1999	2000	2005	2008	2009	2010	2011	2012
<i>kt CO₂ equivalent</i>								
TOTAL	1 210	1 460	1 630	1 890	1 220	1 340	1 410	1 460
ENERGY	1 210	1 450	1 620	1 880	1 210	1 330	1 400	1 450
a. Stationary Combustion Sources	602	853	711	728	657	657	635	714
Electricity and Heat Generation	90.9	110	98	80.7	68.7	66.2	x	x
Fossil Fuel Production and Refining	89	300	150	81	15	27	0.18	5.3
Mining & Oil and Gas Extraction	141	159	210	332	344	371	367	441
Manufacturing Industries	-	-	x	x	x	x	x	x
Construction	0.82	0.27	x	x	x	x	x	x
Commercial & Institutional	191	167	140	109	110	100	102	107
Residential	89.2	119	106	125	119	93.4	101	93.7
Agriculture & Forestry	0.02	0.13	1.53	-	-	-	-	-
b. Transport ¹	596	587	888	1 140	544	664	762	725
Civil Aviation (Domestic Aviation)	120	140	230	260	130	120	120	110
Road Transportation	223	219	251	246	210	186	240	227
Light-Duty Gasoline Vehicles	38.6	39.2	25	36.2	35.8	37.2	37.8	38.5
Light-Duty Gasoline Trucks	27.6	27.4	22	31.9	31.5	32.8	33.4	34
Heavy-Duty Gasoline Vehicles	3.39	3.82	2.92	4.43	4.45	4.63	4.76	4.86
Motorcycles	0.23	0.25	0.22	0.33	0.33	0.35	0.36	0.37
Light-Duty Diesel Vehicles	0.37	0.42	0.3	0.46	0.47	0.5	0.53	0.56
Light-Duty Diesel Trucks	1.43	1.66	x	x	x	x	x	x
Heavy-Duty Diesel Vehicles	150	146	199	170	135	108	160	145
Propane & Natural Gas Vehicles	1.1	0.57	x	x	x	x	x	x
Railways	3.3	3.9	x	x	x	x	9.6	x
Navigation (Domestic Marine)	4.5	-	x	x	x	x	0.3	x
Other Transportation	250	230	400	630	200	360	390	370
Off-Road Gasoline	22	27	15	26	23	19	19	27
Off-Road Diesel	220	190	380	600	170	340	370	340
Pipelines	4.5	5.66	2.74	1.62	2.51	2.51	1.9	2.51
c. Fugitive Sources	8.6	13	19	5.9	7.3	7.3	5.7	7.4
Coal Mining	-	-	-	-	-	-	-	-
Oil and Natural Gas	8.6	13	19	5.9	7.3	7.3	5.7	7.4
INDUSTRIAL PROCESSES²	3.59	5.58	7.05	5.48	5.35	5.73	6.24	6.12
a. Mineral Products	0.01	0.03	0.08	0.08	0.05	0.02	0.03	0.03
Cement Production	-	-	-	-	-	-	-	-
Lime Production	-	-	-	-	-	-	-	-
Mineral Products Use	0.01	0.03	0.08	0.08	0.05	0.02	0.03	0.03
b. Chemical Industry ³	-	-	-	-	-	-	-	-
Adipic Acid Production	-	-	-	-	-	-	-	-
c. Metal Production	-	-	-	-	-	-	-	-
Iron and Steel Production	-	-	-	-	-	-	-	-
Aluminum Production	-	-	-	-	-	-	-	-
SF ₆ Used in Magnesium Smelters and Casters	-	-	-	-	-	-	-	-
d. Production and Consumption of Halocarbons and SF ₆ ⁴	1.2	1.4	2.5	2.4	2.9	3.3	3.7	3.8
e. Other & Undifferentiated Production	2.4	4.1	4.5	3	2.4	2.4	2.5	2.3
SOLVENT & OTHER PRODUCT USE	0.55	0.59	0.51	0.45	0.33	0.31	0.31	0.39
AGRICULTURE	-	-	-	-	-	-	-	-
a. Enteric Fermentation	-	-	-	-	-	-	-	-
b. Manure Management	-	-	-	-	-	-	-	-
c. Agriculture Soils	-	-	-	-	-	-	-	-
Direct Sources	-	-	-	-	-	-	-	-
Pasture, Range and Paddock Manure	-	-	-	-	-	-	-	-
Indirect Sources	-	-	-	-	-	-	-	-
d. Field Burning of Agricultural Residues	-	-	-	-	-	-	-	-
WASTE	4.4	4.5	5.1	5.3	5.3	5.4	5.5	5.5
a. Solid Waste Disposal on Land	1.9	2	2.5	2.6	2.7	2.8	2.8	2.9
b. Wastewater Handling	2.5	2.5	2.6	2.6	2.6	2.6	2.6	2.6
c. Waste Incineration	-	-	-	-	-	-	-	-

Notes:

- Emissions from ethanol and biodiesel are included in the Transport categories using gasoline and diesel respectively.
 - Emissions associated with the consumption of PFCs and SF₆ (except for electric utilities) are only reported at the national level.
 - Emissions from the Ammonia Production, Nitric Acid Production and Petrochemical Production subcategories are included in Other & Undifferentiated Production within the provincial/territorial tables.
 - Only SF₆ emissions from electrical equipment are included. SF₆ emission estimates for semi-conductor manufacturing are only available at the national level.
- Indicates no emissions
0.0 Indicates emissions truncated due to rounding
x Indicates data has been suppressed to respect confidentiality
Note that the 2012 estimates are based on preliminary energy data; these data, though the best available information at the time of publication, are subject to revision in the next submission year.

Table A11–25 2012 GHG Emission Summary for Northwest Territories

Greenhouse Gas Categories		Greenhouse Gases								
Global Warming Potential		CO ₂	CH ₄	CH ₄	N ₂ O	N ₂ O	HFCs	PFCs	SF ₆	TOTAL
Unit		kt	kt	21 kt CO ₂ equivalent	kt	310 kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent
TOTAL		1 370	0.85	18	0.21	65	3.8	-	-	1 460
ENERGY		1 370	0.62	13	0.2	60	-	-	-	1 450
a.	Stationary Combustion Sources	690	0.3	6	0.06	20	-	-	-	714
	Electricity and Heat Generation	x	x	x	x	x	-	-	-	x
	Fossil Fuel Production and Refining	4.94	0.02	0.3	0.0	0.06	-	-	-	5.3
	Mining & Oil and Gas Extraction	427	0.02	0.32	0.04	10	-	-	-	441
	Manufacturing Industries	x	x	x	x	x	-	-	-	x
	Construction	x	x	x	x	x	-	-	-	x
	Commercial & Institutional	106	0.0	0.03	0.0	0.7	-	-	-	107
	Residential	86.9	0.3	6	0.0	1	-	-	-	93.7
	Agriculture & Forestry	-	-	-	-	-	-	-	-	-
b.	Transport ¹	678	0.07	2	0.1	50	-	-	-	725
	Civil Aviation (Domestic Aviation)	113	0.01	0.2	0.0	1	-	-	-	110
	Road Transportation	222	0.01	0.3	0.01	4	-	-	-	227
	Light-Duty Gasoline Vehicles	37.6	0.0	0.09	0.0	0.81	-	-	-	38.5
	Light-Duty Gasoline Trucks	33.3	0.0	0.08	0.0	0.66	-	-	-	34
	Heavy-Duty Gasoline Vehicles	4.75	0.0	0.01	0.0	0.1	-	-	-	4.86
	Motorcycles	0.36	0.0	0.0	0.0	0.0	-	-	-	0.37
	Light-Duty Diesel Vehicles	0.54	0.0	0.0	0.0	0.01	-	-	-	0.56
	Light-Duty Diesel Trucks	x	x	x	x	x	-	-	-	x
	Heavy-Duty Diesel Vehicles	143	0.01	0.1	0.01	2	-	-	-	145
	Propane & Natural Gas Vehicles	x	x	x	x	x	-	-	-	x
	Railways	x	x	x	x	x	-	-	-	x
	Navigation (Domestic Marine)	x	x	x	x	x	-	-	-	x
	Other Transportation	333	0.05	1	0.1	40	-	-	-	370
	Off-Road Gasoline	25.9	0.03	0.6	0.0	0.2	-	-	-	27
	Off-Road Diesel	304	0.02	0.4	0.1	40	-	-	-	340
	Pipelines	2.4	0.0	0.0	0.0	0.1	-	-	-	2.51
c.	Fugitive Sources	2.2	0.25	5.1	-	-	-	-	-	7.4
	Coal Mining	-	-	-	-	-	-	-	-	-
	Oil and Natural Gas	2.2	0.25	5.1	-	-	-	-	-	7.4
	INDUSTRIAL PROCESSES²	2.29	-	-	-	-	3.8	-	-	6.12
a.	Mineral Products	0.03	-	-	-	-	-	-	-	0.03
	Cement Production	-	-	-	-	-	-	-	-	-
	Lime Production	-	-	-	-	-	-	-	-	-
	Mineral Product Use	0.03	-	-	-	-	-	-	-	0.03
b.	Chemical Industry ³	-	-	-	-	-	-	-	-	-
	Adipic Acid Production	-	-	-	-	-	-	-	-	-
c.	Metal Production	-	-	-	-	-	-	-	-	-
	Iron and Steel Production	-	-	-	-	-	-	-	-	-
	Aluminum Production	-	-	-	-	-	-	-	-	-
	SF ₆ Used in Magnesium Smelters and Casters	-	-	-	-	-	-	-	-	-
d.	Production and Consumption of Halocarbons and SF ₆ ⁴	-	-	-	-	-	3.8	-	-	3.8
e.	Other & Undifferentiated Production	2.3	-	-	-	-	-	-	-	2.3
	SOLVENT & OTHER PRODUCT USE	-	-	-	0.0	0.39	-	-	-	0.39
	AGRICULTURE	-	-	-	-	-	-	-	-	-
a.	Enteric Fermentation	-	-	-	-	-	-	-	-	-
b.	Manure Management	-	-	-	-	-	-	-	-	-
c.	Agriculture Soils	-	-	-	-	-	-	-	-	-
	Direct Sources	-	-	-	-	-	-	-	-	-
	Pasture, Range and Paddock Manure	-	-	-	-	-	-	-	-	-
	Indirect Sources	-	-	-	-	-	-	-	-	-
d.	Field Burning of Agricultural Residues	-	-	-	-	-	-	-	-	-
	WASTE	-	0.22	4.7	0.0	0.9	-	-	-	5.5
a.	Solid Waste Disposal on Land	-	0.14	2.9	-	-	-	-	-	2.9
b.	Wastewater Handling	-	0.09	1.8	0.0	0.9	-	-	-	2.6
c.	Waste Incineration	-	-	-	-	-	-	-	-	-

Notes:

1. Emissions from ethanol and biodiesel are included in the Transport categories using gasoline and diesel respectively.

2. Emissions associated with the consumption of PFCs and SF₆ (except for electric utilities) are only reported at the national level.

3. Emissions from the Ammonia Production, Nitric Acid Production and Petrochemical Production subcategories are included in Other & Undifferentiated Production within the provincial/territorial tables.

4. Only SF₆ emissions from electrical equipment are included. SF₆ emission estimates for semi-conductor manufacturing are only available at the national level.

- Indicates no emissions

0.0 Indicates emissions truncated due to rounding

x Indicates data has been suppressed to respect confidentiality

Note that the 2012 estimates are based on preliminary energy data; these data, though the best available information at the time of publication, are subject to revision in the next submission year.

Table A11-26 1999-2012 GHG Emission Summary for Nunavut

Greenhouse Gas Categories		1999	2000	2005	2008	2009	2010	2011	2012
<i>kt CO₂ equivalent</i>									
TOTAL		259	380	344	549	433	422	229	210
ENERGY		253	373	334	538	421	409	216	197
a.	Stationary Combustion Sources	108	92.2	132	129	124	124	75.6	75.9
	Electricity and Heat Generation	108	80	124	129	124	124	x	x
	Fossil Fuel Production and Refining	-	-	-	-	-	-	-	-
	Mining & Oil and Gas Extraction	-	0.76	0.25	-	-	-	-	-
	Manufacturing Industries	-	-	x	x	x	x	x	x
	Construction	-	-	x	x	x	x	x	x
	Commercial & Institutional	-	6.11	8.14	-	-	-	-	-
	Residential	-	5.33	-	-	-	-	-	-
	Agriculture & Forestry	-	-	-	-	-	-	-	-
b.	Transport ¹	145	281	202	409	297	285	140	121
	Civil Aviation (Domestic Aviation)	110	120	140	130	110	120	120	110
	Road Transportation	20.2	25.1	25.2	28.4	29.7	32.9	13.1	8.38
	Light-Duty Gasoline Vehicles	4.1	5.25	3.75	3.97	4.59	4.55	-	-
	Light-Duty Gasoline Trucks	8.9	12.5	11.3	12	13.9	13.7	-	-
	Heavy-Duty Gasoline Vehicles	0.13	0.19	0.19	0.22	0.28	0.31	-	-
	Motorcycles	0.02	0.03	0.03	0.03	0.04	0.04	-	-
	Light-Duty Diesel Vehicles	0.04	0.06	0.05	0.06	0.07	0.07	-	-
	Light-Duty Diesel Trucks	0.49	0.71	0.74	0.75	0.86	0.87	-	-
	Heavy-Duty Diesel Vehicles	5.42	5.81	8.52	10.5	9.55	12.7	12.3	7.73
	Propane & Natural Gas Vehicles	1.1	0.57	0.65	0.92	0.46	0.65	0.76	0.65
	Railways	-	-	x	x	x	x	x	x
	Navigation (Domestic Marine)	-	-	x	x	x	x	x	x
	Other Transportation	16	130	41	250	160	140	5.9	0.75
	Off-Road Gasoline	-	2.2	-	-	0.89	0.52	-	-
	Off-Road Diesel	16	130	41	250	160	140	x	x
	Pipelines	-	-	-	-	-	-	x	x
c.	Fugitive Sources	-	-	-	-	-	-	-	-
	Coal Mining	-	-	-	-	-	-	-	-
	Oil and Natural Gas	-	-	-	-	-	-	-	-
	INDUSTRIAL PROCESSES²	2.9	3.51	6.2	6.8	7.33	8.15	8.77	9.08
a.	Mineral Products	-	-	-	-	-	-	-	-
	Cement Production	-	-	-	-	-	-	-	-
	Lime Production	-	-	-	-	-	-	-	-
	Mineral Products Use	-	-	-	-	-	-	-	-
b.	Chemical Industry ³	-	-	-	-	-	-	-	-
	Adipic Acid Production	-	-	-	-	-	-	-	-
c.	Metal Production	-	-	-	-	-	-	-	-
	Iron and Steel Production	-	-	-	-	-	-	-	-
	Aluminum Production	-	-	-	-	-	-	-	-
	SF ₆ Used in Magnesium Smelters and Casters	-	-	-	-	-	-	-	-
d.	Production and Consumption of Halocarbons and SF ₆ ⁴	2.8	3.4	6.2	6.4	7.3	8.2	8.8	9.1
e.	Other & Undifferentiated Production	0.08	0.08	-	0.42	-	-	-	-
	SOLVENT & OTHER PRODUCT USE	0.36	0.4	0.36	0.33	0.25	0.24	0.25	0.31
	AGRICULTURE	-	-	-	-	-	-	-	-
a.	Enteric Fermentation	-	-	-	-	-	-	-	-
b.	Manure Management	-	-	-	-	-	-	-	-
c.	Agriculture Soils	-	-	-	-	-	-	-	-
	Direct Sources	-	-	-	-	-	-	-	-
	Pasture, Range and Paddock Manure	-	-	-	-	-	-	-	-
	Indirect Sources	-	-	-	-	-	-	-	-
d.	Field Burning of Agricultural Residues	-	-	-	-	-	-	-	-
	WASTE	2.9	3	3.6	3.9	4	4.2	4.3	4.4
a.	Solid Waste Disposal on Land	1.2	1.3	1.7	1.9	2	2.1	2.2	2.3
b.	Wastewater Handling	1.6	1.7	1.9	1.9	2	2	2.1	2.1
c.	Waste Incineration	-	-	-	-	-	-	-	-

Notes:

1. Emissions from ethanol and biodiesel are included in the Transport categories using gasoline and diesel respectively.
 2. Emissions associated with the consumption of PFCs and SF₆ (except for electric utilities) are only reported at the national level.
 3. Emissions from the Ammonia Production, Nitric Acid Production and Petrochemical Production subcategories are included in Other & Undifferentiated Production within the provincial/territorial tables.
 4. Only SF₆ emissions from electrical equipment are included. SF₆ emission estimates for semi-conductor manufacturing are only available at the national level.
- Indicates no emissions
0.0 Indicates emissions truncated due to rounding
x Indicates data has been suppressed to respect confidentiality
Note that the 2012 estimates are based on preliminary energy data; these data, though the best available information at the time of publication, are subject to revision in the next submission year.

Table A11–27 2012 GHG Emission Summary for Nunavut

Greenhouse Gas Categories		Greenhouse Gases								
Global Warming Potential		CO ₂	CH ₄	CH ₄	N ₂ O	N ₂ O	HFCs	PFCs	SF ₆	TOTAL
Unit		kt	kt	21 kt CO ₂ equivalent	kt	310 kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent
TOTAL		192	0.18	3.9	0.02	5.5	9.1	-	-	210
ENERGY		192	0.01	0.14	0.01	5	-	-	-	197
a.	Stationary Combustion Sources	72.4	0.0	0.08	0.01	3	-	-	-	75.9
	Electricity and Heat Generation	x	x	x	x	x	-	-	-	x
	Fossil Fuel Production and Refining	-	-	-	-	-	-	-	-	-
	Mining & Oil and Gas Extraction	-	-	-	-	-	-	-	-	-
	Manufacturing Industries	x	x	x	x	x	-	-	-	x
	Construction	x	x	x	x	x	-	-	-	x
	Commercial & Institutional	-	-	-	-	-	-	-	-	-
	Residential	-	-	-	-	-	-	-	-	-
	Agriculture & Forestry	-	-	-	-	-	-	-	-	-
b.	Transport ¹	119	0.0	0.07	0.0	1	-	-	-	121
	Civil Aviation (Domestic Aviation)	111	0.0	0.05	0.0	1	-	-	-	110
	Road Transportation	8.24	0.0	0.01	0.0	0.13	-	-	-	8.38
	Light-Duty Gasoline Vehicles	-	-	-	-	-	-	-	-	-
	Light-Duty Gasoline Trucks	-	-	-	-	-	-	-	-	-
	Heavy-Duty Gasoline Vehicles	-	-	-	-	-	-	-	-	-
	Motorcycles	-	-	-	-	-	-	-	-	-
	Light-Duty Diesel Vehicles	-	-	-	-	-	-	-	-	-
	Light-Duty Diesel Trucks	-	-	-	-	-	-	-	-	-
	Heavy-Duty Diesel Vehicles	7.59	0.0	0.01	0.0	0.1	-	-	-	7.73
	Propane & Natural Gas Vehicles	0.64	0.0	0.01	0.0	0.0	-	-	-	0.65
	Railways	x	x	x	x	x	-	-	-	x
	Navigation (Domestic Marine)	x	x	x	x	x	-	-	-	x
	Other Transportation	0.66	0.0	0.0	0.0	0.08	-	-	-	0.75
	Off-Road Gasoline	-	-	-	-	-	-	-	-	-
	Off-Road Diesel	x	x	x	x	x	-	-	-	x
	Pipelines	x	x	x	x	x	-	-	-	x
c.	Fugitive Sources	-	-	-	-	-	-	-	-	-
	Coal Mining	-	-	-	-	-	-	-	-	-
	Oil and Natural Gas	-	-	-	-	-	-	-	-	-
	INDUSTRIAL PROCESSES²	-	-	-	-	-	9.1	-	-	9.08
a.	Mineral Products	-	-	-	-	-	-	-	-	-
	Cement Production	-	-	-	-	-	-	-	-	-
	Lime Production	-	-	-	-	-	-	-	-	-
	Mineral Product Use	-	-	-	-	-	-	-	-	-
b.	Chemical Industry ³	-	-	-	-	-	-	-	-	-
	Adipic Acid Production	-	-	-	-	-	-	-	-	-
c.	Metal Production	-	-	-	-	-	-	-	-	-
	Iron and Steel Production	-	-	-	-	-	-	-	-	-
	Aluminum Production	-	-	-	-	-	-	-	-	-
	SF ₆ Used in Magnesium Smelters and Casters	-	-	-	-	-	-	-	-	-
d.	Production and Consumption of Halocarbons and SF ₆ ⁴	-	-	-	-	-	9.1	-	-	9.1
e.	Other & Undifferentiated Production	-	-	-	-	-	-	-	-	-
	SOLVENT & OTHER PRODUCT USE	-	-	-	0.0	0.31	-	-	-	0.31
	AGRICULTURE	-	-	-	-	-	-	-	-	-
a.	Enteric Fermentation	-	-	-	-	-	-	-	-	-
b.	Manure Management	-	-	-	-	-	-	-	-	-
c.	Agriculture Soils	-	-	-	-	-	-	-	-	-
	Direct Sources	-	-	-	-	-	-	-	-	-
	Pasture, Range and Paddock Manure	-	-	-	-	-	-	-	-	-
	Indirect Sources	-	-	-	-	-	-	-	-	-
d.	Field Burning of Agricultural Residues	-	-	-	-	-	-	-	-	-
	WASTE	-	0.18	3.7	0.0	0.7	-	-	-	4.4
a.	Solid Waste Disposal on Land	-	0.11	2.3	-	-	-	-	-	2.3
b.	Wastewater Handling	-	0.07	1.4	0.0	0.7	-	-	-	2.1
c.	Waste Incineration	-	-	-	-	-	-	-	-	-

Notes:

- Emissions from ethanol and biodiesel are included in the Transport categories using gasoline and diesel respectively.
 - Emissions associated with the consumption of PFCs and SF₆ (except for electric utilities) are only reported at the national level.
 - Emissions from the Ammonia Production, Nitric Acid Production and Petrochemical Production subcategories are included in Other & Undifferentiated Production within the provincial/territorial tables.
 - Only SF₆ emissions from electrical equipment are included. SF₆ emission estimates for semi-conductor manufacturing are only available at the national level.
- Indicates no emissions
0.0 Indicates emissions truncated due to rounding
x Indicates data has been suppressed to respect confidentiality
Note that the 2012 estimates are based on preliminary energy data; these data, though the best available information at the time of publication, are subject to revision in the next submission year.

Table A11-28 1990-1998 GHG Emission Summary for Northwest Territories and Nunavut

Greenhouse Gas Categories									
	1990	1991	1992	1993	1994	1995	1996	1997	1998
<i>kt CO₂ equivalent</i>									
TOTAL	1 540	1 490	1 360	1 640	1 820	1 940	1 960	1 720	1 560
ENERGY	1 530	1 470	1 350	1 610	1 710	1 850	1 890	1 710	1 550
a. Stationary Combustion Sources	857	923	852	948	1 010	1 160	1 030	978	739
Electricity and Heat Generation	162	161	131	141	144	161	123	134	179
Fossil Fuel Production and Refining	200	120	96	110	100	130	120	110	120
Mining & Oil and Gas Extraction	50.8	55	38.7	66.1	151	232	184	181	136
Manufacturing Industries	25.6	16.1	18.3	8.27	13.3	19.8	-	-	-
Construction	5.69	5.26	5.64	3.12	3.7	20.4	0.67	0.69	0.52
Commercial & Institutional	248	364	355	386	398	470	402	368	206
Residential	159	192	196	233	192	122	200	185	94.1
Agriculture & Forestry	2.46	8.91	11.9	2.02	2.03	0.01	-	0.01	0.02
b. Transport ¹	611	481	445	601	656	649	815	725	806
Civil Aviation (Domestic Aviation)	240	210	220	230	240	220	230	220	230
Road Transportation	119	104	102	114	135	147	162	157	222
Light-Duty Gasoline Vehicles	32.6	31.2	31.1	39.3	41	36.5	39.1	39.6	38.4
Light-Duty Gasoline Trucks	14.1	14.4	15.2	20.4	23.3	22.4	25.7	29.1	28.7
Heavy-Duty Gasoline Vehicles	4.64	3.86	3.52	4.24	3.68	3.53	3.76	3.49	3.47
Motorcycles	0.2	0.2	0.2	0.25	0.25	0.23	0.26	0.26	0.22
Light-Duty Diesel Vehicles	0.32	0.3	0.3	0.39	0.4	0.35	0.39	0.39	0.38
Light-Duty Diesel Trucks	0.23	0.25	0.29	0.4	0.5	0.5	0.93	1.63	1.65
Heavy-Duty Diesel Vehicles	65.6	52.1	48.5	47.1	60.3	79.1	89.6	80.4	147
Propane & Natural Gas Vehicles	1.5	1.5	2.9	2.3	5.9	4	2.3	2.1	2.1
Railways	2.6	2	2.1	2.2	1.5	2.4	1.2	2.7	2.4
Navigation (Domestic Marine)	0.15	0.23	0.59	0.51	0.11	70	-	-	-
Other Transportation	250	170	120	250	280	210	420	340	360
Off-Road Gasoline	52	41	42	61	59	45	61	62	38
Off-Road Diesel	200	130	82	190	220	160	360	280	320
Pipelines	-	-	-	-	2.28	0.14	0.09	0.04	-
c. Fugitive Sources	64	68	58	62	43	42	39	6.2	4.9
Coal Mining	-	-	-	-	-	-	-	-	-
Oil and Natural Gas	64	68	58	62	43	42	39	6.2	4.9
INDUSTRIAL PROCESSES²	3.04	11.4	2.23	24.3	104	85.6	65.4	4.58	4.03
a. Mineral Products	-	-	-	-	-	-	-	-	-
Cement Production	-	-	-	-	-	-	-	-	-
Lime Production	-	-	-	-	-	-	-	-	-
Mineral Products Use	-	-	-	-	-	-	-	-	-
b. Chemical Industry ³	-	-	-	-	-	-	-	-	-
Adipic Acid Production	-	-	-	-	-	-	-	-	-
c. Metal Production	-	-	-	-	-	-	-	-	-
Iron and Steel Production	-	-	-	-	-	-	-	-	-
Aluminum Production	-	-	-	-	-	-	-	-	-
SF ₆ Used in Magnesium Smelters and Casters	-	-	-	-	-	-	-	-	-
d. Production and Consumption of Halocarbons and SF ₆ ⁴	-	-	-	-	-	1	0.77	1.6	2.7
e. Other & Undifferentiated Production	3	11	2.2	24	100	85	65	3	1.4
SOLVENT & OTHER PRODUCT USE	0.38	0.37	0.31	0.35	0.39	0.48	0.49	0.52	0.89
AGRICULTURE	-								
a. Enteric Fermentation	-	-	-	-	-	-	-	-	-
b. Manure Management	-	-	-	-	-	-	-	-	-
c. Agriculture Soils	-	-	-	-	-	-	-	-	-
Direct Sources	-	-	-	-	-	-	-	-	-
Pasture, Range and Paddock Manure	-	-	-	-	-	-	-	-	-
Indirect Sources	-	-	-	-	-	-	-	-	-
d. Field Burning of Agricultural Residues	-	-	-	-	-	-	-	-	-
WASTE	5.1	5.4	5.6	5.8	6.1	6.4	6.6	6.8	7
a. Solid Waste Disposal on Land	1.6	1.7	1.9	2	2.2	2.3	2.5	2.7	2.9
b. Wastewater Handling	3.5	3.6	3.7	3.8	3.9	4	4.1	4.1	4.1
c. Waste Incineration	-	-	-	-	-	-	-	-	-

Notes:

1. Emissions from ethanol and biodiesel are included in the Transport categories using gasoline and diesel respectively.
 2. Emissions associated with the consumption of PFCs and SF₆ (except for electric utilities) are only reported at the national level.
 3. Emissions from the Ammonia Production, Nitric Acid Production and Petrochemical Production subcategories are included in Other & Undifferentiated Production within the provincial/territorial tables.
 4. Only SF₆ emissions from electrical equipment are included. SF₆ emission estimates for semi-conductor manufacturing are only available at the national level.
- Indicates no emissions
0.0 Indicates emissions truncated due to rounding
x Indicates data has been suppressed to respect confidentiality

Annex 12

Canada's Greenhouse Gas Emission Tables, 1990–2012

This annex contains summary tables (Table A12–1 to Table A12–25) illustrating national GHG emissions by year, by gas, and by sector.

Table A12-1 GHG Source/Sink Category Description

GHG Source/Sink Categories	
ENERGY	
a. Stationary Combustion Sources	
Electricity and Heat Generation	Emissions from fuel consumed by:
Electricity Generation	- Utility electricity generation
Heat Generation	- Steam generation (for sale)
Fossil Fuel Production and Refining	Emissions from fuel consumed by:
Petroleum Refining	- Petroleum refining and oil sands upgrading industries
Fossil Fuel Production	- Natural gas production and some conventional and unconventional oil production industries (some refining is included)
Mining & Oil and Gas Extraction	Emissions from commercial fuel sold to:
	- Metal and non-metal mines, stone quarries, and gravel pits
	- Oil and gas extraction industries
	- Mineral exploration and contract drilling operations
Manufacturing Industries	Emissions from fuel consumed by the following industries:
	- Iron and Steel (steel foundries, casting and rolling mills)
	- Non-ferrous metals (aluminium, magnesium and other production)
	- Chemical (fertilizer manufacturing, organic and inorganic chemical manufacturing)
	- Pulp and Paper (primarily pulp, paper, and paper product manufacturers)
	- Cement production
	- Other manufacturing industries not listed (such as automobile manufacturing, textiles, food and beverage industries)
Construction	Emissions from fuels consumed by the construction industry - buildings, highways etc.
Commercial & Institutional	Emissions from fuel consumed by:
	- Service industries related to mining, communication, wholesale and retail trade, finance and insurance, real estate, education, etc.)
	- Federal, provincial and municipal establishments
	- National Defence and Canadian Coast Guard
	- Train stations, airports and warehouses
Residential	Emissions from fuel consumed for personal residences (homes, apartment hotels, condominiums, and farm house)
Agriculture & Forestry	Emissions from fuel consumed by:
	- Forestry and logging service industry
	- Agricultural, hunting and trapping industry (excluding food processing, farm machinery manufacturing, and repair)
b. Transportation	Emissions resulting from the:
Domestic Aviation	- Consumption of fossil fuels by airlines flying domestically with Canadian purchased fuel
Road Transportation	- Consumption of fossil fuels (including non-CO ₂ emissions from ethanol and biodiesel) by vehicles licensed to operate on roads
Railways	- Consumption of fossil fuels by Canadian railways
Domestic Marine	- Consumption of fossil fuels by Canadian registered marine vessels fuelled domestically
Others - Off Road	- Consumption of fossil fuels (including non-CO ₂ emissions from ethanol and biodiesel) by combustion devices not licensed to operate on roads
Others - Pipelines	- Transportation and distribution of crude oil, natural gas and other products
c. Fugitive Sources	Intentional and unintentional releases of greenhouse gases from the following activities:
Coal Mining	- Underground and surface mining
Oil and Natural Gas	- Conventional and unconventional oil and gas exploration, production, transportation, and distribution
INDUSTRIAL PROCESSES	
a. Mineral Products	Emissions resulting from the following process activities:
b. Chemical Industry	- Production of cement and lime; use of soda ash, limestone & dolomite, and magnesite
c. Metal Production	- Production of ammonia, nitric acid, adipic acid, carbide, carbon black, ethylene dichloride, ethylene, methanol and styrene
d. Production and Consumption of Halocarbons and SF ₆	- Production of aluminum, iron and steel, magnesium production and casting
e. Other & Undifferentiated Production	- Production of HCFC-22; use of HFCs and/or PFCs in air conditioning units, refrigeration units, fire extinguishers, aerosol cans, solvents, foam blowing, semiconductor manufacturing and electronics industry; use of SF ₆ in electrical equipment and semiconductors
	- Non-energy use of fossil fuels mostly in chemical/petrochemical activities
SOLVENT & OTHER PRODUCT USE	
	Emissions resulting from the use of N ₂ O as anaesthetic and propellant
AGRICULTURE	
a. Enteric Fermentation	Emissions resulting from the:
b. Manure Management	- Eructation of CH ₄ during the digestion of plant material by (mainly) ruminants
c. Agricultural Soils	- Release of CH ₄ and N ₂ O due to microbial activity during the storage of feces, urine and bedding materials from the cleaning of barns and pens
Direct sources	- Direct N ₂ O emissions from synthetic fertilizer, manure on cropland, crop residue, tillage, summerfallow, irrigation and cultivation of organic soils
Manure on Pasture, Range, and Paddock	- Direct N ₂ O emissions from manure deposited on pasture, range and paddock
Indirect Sources	- Indirect N ₂ O emissions from volatilization and leaching of animal manure nitrogen, synthetic fertilizer nitrogen and crop residue nitrogen
d. Field Burning of Agricultural Residues	- CH ₄ and N ₂ O emissions from crop residue burning
WASTE	
a. Solid Waste Disposal on Land	Emissions resulting from:
b. Wastewater Handling	- Municipal solid waste management sites (landfills) and dedicated wood waste landfills
c. Waste Incineration	- Domestic and industrial wastewater treatment
	- Municipal solid waste and sewage sludge incineration
LAND USE, LAND-USE CHANGE AND FORESTRY	
a. Forest Land	Emissions and removals resulting from:
b. Cropland	- Managed forests and lands converted to forests; includes growth, natural and anthropogenic disturbances (fire, harvest, insects).
c. Grassland	- Management practices on lands in annual crops, summerfallow and perennial crops (forage, specialty crops, orchards); immediate and residual emissions from lands converted to cropland.
d. Wetlands	- Managed agricultural grassland.
e. Settlements	- Peatlands disturbed for peat harvesting, or land flooded from hydro reservoir development.
	- Forest and grassland converted to built-up land (settlements, transport infrastructure, oil & gas infrastructure, mining etc); urban tree growth

Table A12–2 Canada's 1990–2012 GHG Emissions by Sector

Greenhouse Gas Categories	1990	2000	2005	2008	2009	2010	2011	2012
	<i>kt CO₂ equivalent</i>							
TOTAL¹	591 000	721 000	736 000	731 000	689 000	699 000	701 000	699 000
ENERGY	469 000	591 000	595 000	592 000	560 000	570 000	573 000	566 000
a. Stationary Combustion Sources	280 000	347 000	338 000	334 000	313 000	313 000	316 000	309 000
Electricity and Heat Generation	93 600	130 000	123 000	115 000	99 100	101 000	93 700	88 300
Fossil Fuel Production and Refining	51 000	68 000	68 000	65 000	65 000	63 000	62 000	63 000
Petroleum Refining	16 800	16 900	20 200	19 500	18 900	17 800	17 300	16 800
Fossil Fuel Production	34 000	51 000	48 000	46 000	46 000	45 000	45 000	47 000
Mining & Oil and Gas Extraction	6 590	12 000	18 900	30 000	31 700	34 700	35 900	40 900
Manufacturing Industries	55 800	55 800	48 500	45 100	40 300	41 100	44 600	43 100
Iron and Steel	4 950	6 210	5 550	5 760	4 280	4 440	5 270	5 480
Non Ferrous Metals	3 260	3 530	3 570	3 750	2 810	2 950	3 270	3 250
Chemical	8 220	10 800	8 280	8 750	8 830	9 860	11 100	10 100
Pulp and Paper	14 500	12 600	8 740	6 400	6 510	6 070	6 330	5 890
Cement	3 920	4 580	5 380	4 910	4 480	4 030	4 280	3 960
Other Manufacturing	21 000	18 100	16 900	15 500	13 400	13 700	14 400	14 400
Construction	1 870	1 080	1 440	1 370	1 210	1 500	1 430	1 450
Commercial & Institutional	25 700	32 900	31 900	29 600	29 400	28 000	29 900	27 800
Residential	43 500	45 100	44 300	45 900	43 900	41 300	44 400	40 900
Agriculture & Forestry	2 390	2 550	2 100	2 610	2 530	2 880	3 430	3 540
b. Transport²	147 000	180 000	194 000	196 000	188 000	198 000	198 000	195 000
Civil Aviation (Domestic Aviation)	7 100	7 600	7 600	7 300	6 400	6 400	6 200	6 100
Road Transportation	96 700	118 000	130 000	132 000	132 000	134 000	132 000	132 000
Light-Duty Gasoline Vehicles	45 500	42 000	40 200	39 500	39 700	40 000	38 500	38 300
Light-Duty Gasoline Trucks	20 300	36 400	42 700	42 300	42 500	42 900	41 200	41 400
Heavy-Duty Gasoline Vehicles	7 440	5 470	6 540	6 800	6 910	7 020	6 710	6 910
Motorcycles	152	162	254	263	266	271	264	268
Light-Duty Diesel Vehicles	469	466	574	652	699	750	788	824
Light-Duty Diesel Trucks	702	1 660	1 920	2 020	2 030	2 090	2 050	2 130
Heavy-Duty Diesel Vehicles	20 000	30 800	37 600	39 200	39 000	40 200	42 000	41 700
Propane & Natural Gas Vehicles	2 200	1 100	720	880	780	780	820	880
Railways	7 000	6 600	6 600	7 900	5 100	6 600	7 500	7 600
Navigation (Domestic Marine)	5 000	5 200	6 700	6 500	6 700	7 000	5 800	5 800
Other Transportation	31 000	43 000	42 000	42 000	38 000	44 000	46 000	43 000
Off-Road Gasoline	7 800	8 700	8 300	7 300	7 300	7 900	8 100	7 600
Off-Road Diesel	16 000	23 000	24 000	28 000	25 000	30 000	32 000	30 000
Pipelines	6 850	11 200	10 100	7 460	6 310	5 670	5 600	5 700
c. Fugitive Sources	42 000	63 000	63 000	62 000	59 000	58 000	60 000	61 000
Coal Mining	2 000	1 000	1 000	900	900	1 000	1 000	1 000
Oil and Natural Gas	40 000	62 000	62 000	61 000	58 000	57 000	59 000	60 000
Oil	4 200	5 400	5 700	5 500	5 500	5 700	5 900	6 500
Natural Gas	11 000	18 000	19 000	20 000	19 000	19 000	19 000	19 000
Venting	20 000	33 000	32 000	31 000	29 000	28 000	29 000	30 000
Flaring	4 400	5 400	5 500	5 100	4 400	4 300	4 700	4 700
INDUSTRIAL PROCESSES	55 700	53 800	60 400	59 000	51 800	54 100	54 700	56 500
a. Mineral Products	8 400	9 800	9 900	9 000	7 000	7 600	7 800	8 400
Cement Production	5 400	6 700	7 200	6 600	5 100	5 700	5 700	6 300
Lime Production	1 760	1 870	1 710	1 540	1 190	1 370	1 430	1 440
Mineral Product Use	1 200	1 200	1 000	890	720	540	670	620
b. Chemical Industry³	16 000	8 000	9 300	9 400	7 100	6 500	7 000	7 000
Ammonia Production	4 510	5 730	5 350	5 600	5 230	5 300	5 750	5 770
Nitric Acid Production	1 000	1 200	1 300	1 300	1 100	1 100	1 200	1 100
Adipic Acid Production	11 000	900	2 600	2 400	660	0.2	0.21	0.21
Petrochemical Production ⁴	110	97	79	73	62	64	64	64
c. Metal Production	22 600	22 500	19 700	18 500	15 400	15 800	16 600	16 300
Iron and Steel Production	10 200	11 500	10 200	10 700	8 030	9 030	9 860	9 840
Aluminum Production	9 310	8 230	8 170	7 420	7 200	6 620	6 580	6 230
SF ₆ Used in Magnesium Smelters and Casters	3 110	2 780	1 290	462	193	190	200	257
d. Production and Consumption of Halocarbons and SF₆⁵	990	3 200	5 500	5 800	6 500	7 300	7 700	8 000
e. Other & Undifferentiated Production	7 400	10 000	16 000	16 000	16 000	17 000	15 000	17 000
SOLVENT & OTHER PRODUCT USE	180	450	380	340	260	240	250	310
AGRICULTURE	47 000	56 000	58 000	58 000	56 000	55 000	53 000	56 000
a. Enteric Fermentation	16 000	20 000	22 000	20 000	19 000	18 000	17 000	18 000
b. Manure Management	5 700	7 000	7 500	6 900	6 600	6 500	6 300	6 400
c. Agriculture Soils	25 000	29 000	29 000	31 000	30 000	30 000	29 000	32 000
Direct Sources	14 000	15 000	15 000	17 000	16 000	17 000	16 000	17 000
Pasture, Range and Paddock Manure	2 200	3 100	3 400	3 100	2 900	2 800	2 600	2 700
Indirect Sources	9 000	10 000	10 000	10 000	10 000	10 000	10 000	10 000
d. Field Burning of Agricultural Residues	200	100	40	40	40	30	30	30
WASTE	19 000	21 000	22 000	22 000	22 000	20 000	20 000	21 000
a. Solid Waste Disposal on Land	17 000	19 000	20 000	20 000	20 000	19 000	19 000	19 000
b. Wastewater Handling	830	920	950	970	980	990	990	1 000
c. Waste Incineration	740	750	700	710	680	680	670	670
LAND USE, LAND-USE CHANGE AND FORESTRY	-71 000	-52 000	53 000	-17 000	-27 000	76 000	77 000	41 000
a. Forest Land	-98 000	-65 000	44 000	-26 000	-35 000	68 000	69 000	32 000
b. Cropland	12 000	280	-3 800	-4 900	-4 900	-5 000	-4 800	-4 900
c. Grassland	600	900	800	400	400	300	600	1 000
d. Wetlands	5 000	3 000	3 000	3 000	3 000	3 000	3 000	3 000
e. Settlements	9 000	9 000	10 000	10 000	9 000	10 000	10 000	10 000

Notes:

- National totals exclude all GHGs from the Land Use, Land-use Change and Forestry sector.
 - Emissions from ethanol and biodiesel are included in the Transport categories using gasoline and diesel respectively.
 - Emissions from the Ammonia Production, Nitric Acid Production and Petrochemical Production subcategories are included in Other & Undifferentiated Production within the provincial/territorial tables.
 - The category Petrochemical Production includes CH₄ and N₂O emissions. CO₂ emissions are included in Other & Undifferentiated Production.
 - HFC emissions occurring as a by-product of HCFC production (HCFC-22 exclusively) only occurred in Canada from 1990–1992. HFC consumption began in 1995.
- Indicates no emissions
0.0 Indicates emissions truncated due to rounding
Note that the 2012 estimates are based on preliminary energy data; these data, though the best available information at the time of publication, are subject to revision in the next submission year.

Table A12-3 2012 GHG Emission Summary for Canada

Greenhouse Gas Categories	Greenhouse Gases								
	CO ₂	CH ₄	CH ₄	N ₂ O	N ₂ O	HFCs	PFCS	SF ₆	TOTAL
	Global Warming Potential Unit	kt	kt	21 kt CO ₂ equivalent	kt	310 kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent
TOTAL¹	551 000	4 300	91 000	150	48 000	7 800	1 600	450	699 000
ENERGY	505 000	2 400	51 000	30	10 000	-	-	-	566 000
a. Stationary Combustion Sources	303 000	200	4 000	8	3 000	-	-	-	309 000
Electricity and Heat Generation	87 600	6.4	130	2	600	-	-	-	88 300
Fossil Fuel Production and Refining	61 200	90	2 000	1	300	-	-	-	63 000
Petroleum Refining	16 800	0.22	4.7	0.12	37	-	-	-	16 800
Fossil Fuel Production	44 000	90	1 900	0.99	306	-	-	-	47 000
Mining & Oil and Gas Extraction	40 600	0.78	16	0.9	300	-	-	-	40 900
Manufacturing Industries	42 400	2	50	2	600	-	-	-	43 100
Iron and Steel	5 420	0.2	5	0.2	60	-	-	-	5 480
Non Ferrous Metals	3 240	0.06	1	0.04	10	-	-	-	3 250
Chemical	10 000	0.19	4.1	0.2	50	-	-	-	10 100
Pulp and Paper	5 500	2	30	1	400	-	-	-	5 890
Cement	3 940	0.21	4.4	0.05	20	-	-	-	3 960
Other Manufacturing	14 300	0.28	5.9	0.3	90	-	-	-	14 400
Construction	1 440	0.03	0.53	0.04	10	-	-	-	1 450
Commercial & Institutional	27 600	0.53	11	0.6	200	-	-	-	27 800
Residential	38 200	100	2 000	2	600	-	-	-	40 900
Agriculture & Forestry	3 510	0.06	1.3	0.1	29	-	-	-	3 540
b. Transport²	187 000	30	600	20	8 000	-	-	-	195 000
Civil Aviation (Domestic Aviation)	5 990	0.3	7	0.2	60	-	-	-	6 100
Road Transportation	129 000	10	200	9.1	2 800	-	-	-	132 000
Light-Duty Gasoline Vehicles	37 400	3.3	70	2.9	900	-	-	-	38 300
Light-Duty Gasoline Trucks	40 400	3.7	77	3	930	-	-	-	41 400
Heavy-Duty Gasoline Vehicles	6 720	0.27	5.7	0.58	180	-	-	-	6 910
Motorcycles	264	0.11	2.2	0.01	1.6	-	-	-	268
Light-Duty Diesel Vehicles	803	0.02	0.3	0.07	20	-	-	-	824
Light-Duty Diesel Trucks	2 080	0.05	1	0.2	50	-	-	-	2 130
Heavy-Duty Diesel Vehicles	40 900	2	40	2	700	-	-	-	41 700
Propane & Natural Gas Vehicles	859	0.7	20	0.02	5	-	-	-	880
Railways	6 720	0.4	8	3	900	-	-	-	7 600
Navigation (Domestic Marine)	5 440	0.4	9	1	300	-	-	-	5 800
Other Transportation	39 400	20	300	10	4 000	-	-	-	43 000
Off-Road Gasoline	7 400	9	200	0.2	50	-	-	-	7 600
Off-Road Diesel	26 500	1	30	10	3 000	-	-	-	30 000
Pipelines	5 530	5.6	120	0.2	50	-	-	-	5 700
c. Fugitive Sources	15 000	2 200	46 000	0.1	40	-	-	-	61 000
Coal Mining	-	50	1 000	-	-	-	-	-	1 000
Oil and Natural Gas	15 000	2 100	45 000	0.1	40	-	-	-	60 000
Oil	220	300	6 300	0.1	30	-	-	-	6 500
Natural Gas	72	920	19 000	-	-	-	-	-	19 000
Venting	10 000	930	19 000	-	-	-	-	-	30 000
Flaring	4 700	3.6	75	0.01	4	-	-	-	4 700
INDUSTRIAL PROCESSES	45 500	2.7	56	3.72	1 150	7 800	1 600	450	56 500
a. Mineral Products	8 400	-	-	-	-	-	-	-	8 400
Cement Production	6 300	-	-	-	-	-	-	-	6 300
Lime Production	1 440	-	-	-	-	-	-	-	1 440
Mineral Product Use	620	-	-	-	-	-	-	-	620
b. Chemical Industry³	5 800	2.7	56	3.7	1 200	-	-	-	7 000
Ammonia Production	5 770	-	-	-	-	-	-	-	5 770
Nitric Acid Production	-	-	-	3.7	1 100	-	-	-	1 100
Adipic Acid Production	-	-	-	0.0	0.21	-	-	-	0.21
Petrochemical Production ⁴	-	2.7	56	0.03	7.9	-	-	-	64
c. Metal Production	14 600	-	-	-	-	-	1 520	262	16 300
Iron and Steel Production	9 840	-	-	-	-	-	-	-	9 840
Aluminum Production	4 710	-	-	-	-	-	1 520	5.01	6 230
SF ₆ Used in Magnesium Smelters and Casters	-	-	-	-	-	-	-	257	257
d. Production and Consumption of Halocarbons and SF₆⁵	-	-	-	-	-	7 800	32	190	8 000
e. Other & Undifferentiated Production	17 000	-	-	-	-	-	-	-	17 000
SOLVENT & OTHER PRODUCT USE	-	-	-	1	310	-	-	-	310
AGRICULTURE	-	970	20 000	100	40 000	-	-	-	56 000
a. Enteric Fermentation	-	840	18 000	-	-	-	-	-	18 000
b. Manure Management	-	130	2 800	11.7	3 640	-	-	-	6 400
c. Agriculture Soils	-	-	-	100	32 000	-	-	-	32 000
Direct Sources	-	-	-	55	17 000	-	-	-	17 000
Pasture, Range and Paddock Manure	-	-	-	8.7	2 700	-	-	-	2 700
Indirect Sources	-	-	-	40	10 000	-	-	-	10 000
d. Field Burning of Agricultural Residues	-	1	20	0.03	10	-	-	-	30
WASTE	480	920	19 000	3	900	-	-	-	21 000
a. Solid Waste Disposal on Land	-	900	19 000	-	-	-	-	-	19 000
b. Wastewater Handling	-	15	320	2	700	-	-	-	1 000
c. Waste Incineration	480	0.1	3	0.6	200	-	-	-	670
LAND USE, LAND-USE CHANGE AND FORESTRY	24 000	490	10 000	20	6 100	-	-	-	41 000
a. Forest Land	17 000	430	9 000	18	5 600	-	-	-	32 000
b. Cropland	-5 100	5	100	0.3	80	-	-	-	-4 900
c. Grassland	-	50	1 000	1	400	-	-	-	1 000
d. Wetlands	3 000	-	-	-	-	-	-	-	3 000
e. Settlements	10 000	6	100	0.2	70	-	-	-	10 000

Notes:

- National totals exclude all GHGs from the Land Use, Land-use Change and Forestry sector.
- Emissions from ethanol and biodiesel are included in the Transport categories using gasoline and diesel respectively.
- Emissions from the Ammonia Production, Nitric Acid Production and Petrochemical Production subcategories are included in Other & Undifferentiated Production within the provincial/territorial tables.
- The category Petrochemical Production includes CH₄ and N₂O emissions. CO₂ emissions are included in Other & Undifferentiated Production.
- HFC emissions occurring as a by-product of HFC production (HFC-22 exclusively) only occurred in Canada from 1990-1992. HFC consumption began in 1995.
- Indicates no emissions
- 0.0 Indicates emissions truncated due to rounding

Note that the 2012 estimates are based on preliminary energy data; these data, though the best available information at the time of publication, are subject to revision in the next submission year.

Table A12–4 2011 GHG Emission Summary for Canada

Greenhouse Gas Categories	Greenhouse Gases								
	CO ₂	CH ₄	CH ₄	N ₂ O	N ₂ O	HFCs	PFCS	SF ₆	TOTAL
Global Warming Potential Unit	kt	kt	21 kt CO ₂ equivalent	kt	310 kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent
TOTAL¹	557 000	4 200	89 000	150	46 000	7 500	1 500	420	701 000
ENERGY	513 000	2 300	49 000	30	10 000	-	-	-	573 000
a. Stationary Combustion Sources	309 000	200	4 000	8	3 000	-	-	-	316 000
Electricity and Heat Generation	93 000	6.5	140	2	600	-	-	-	93 700
Fossil Fuel Production and Refining	60 200	90	2 000	1	300	-	-	-	62 000
Petroleum Refining	17 200	0.24	5.1	0.13	39	-	-	-	17 300
Fossil Fuel Production	43 000	88	1 800	0.92	284	-	-	-	45 000
Mining & Oil and Gas Extraction	35 600	0.68	14	0.8	200	-	-	-	35 900
Manufacturing Industries	44 000	3	50	2	600	-	-	-	44 600
Iron and Steel	5 210	0.2	5	0.2	50	-	-	-	5 270
Non Ferrous Metals	3 260	0.06	1	0.04	10	-	-	-	3 270
Chemical	11 000	0.21	4.5	0.2	60	-	-	-	11 100
Pulp and Paper	5 920	2	30	1	400	-	-	-	6 330
Cement	4 260	0.21	4.4	0.05	20	-	-	-	4 280
Other Manufacturing	14 300	0.28	5.9	0.3	90	-	-	-	14 400
Construction	1 420	0.03	0.52	0.04	10	-	-	-	1 430
Commercial & Institutional	29 700	0.57	12	0.7	200	-	-	-	29 900
Residential	41 600	100	2 000	2	600	-	-	-	44 400
Agriculture & Forestry	3 410	0.06	1.3	0.09	28	-	-	-	3 430
b. Transport²	189 000	30	600	30	8 000	-	-	-	198 000
Civil Aviation (Domestic Aviation)	6 090	0.3	7	0.2	60	-	-	-	6 200
Road Transportation	129 000	10	200	10	3 100	-	-	-	132 000
Light-Duty Gasoline Vehicles	37 400	3.4	72	3.3	1 000	-	-	-	38 500
Light-Duty Gasoline Trucks	40 000	3.7	78	3.5	1 100	-	-	-	41 200
Heavy-Duty Gasoline Vehicles	6 530	0.28	5.8	0.55	170	-	-	-	6 710
Motorcycles	260	0.11	2.2	0.01	1.6	-	-	-	264
Light-Duty Diesel Vehicles	768	0.02	0.3	0.06	20	-	-	-	788
Light-Duty Diesel Trucks	2 000	0.05	1	0.2	50	-	-	-	2 050
Heavy-Duty Diesel Vehicles	41 200	2	40	2	700	-	-	-	42 000
Propane & Natural Gas Vehicles	796	0.7	10	0.02	5	-	-	-	820
Railways	6 670	0.4	8	3	900	-	-	-	7 500
Navigation (Domestic Marine)	5 490	0.4	9	1	400	-	-	-	5 800
Other Transportation	41 600	20	400	10	4 000	-	-	-	46 000
Off-Road Gasoline	7 790	10	200	0.2	60	-	-	-	8 100
Off-Road Diesel	28 300	2	30	10	4 000	-	-	-	32 000
Pipelines	5 440	5.5	120	0.1	50	-	-	-	5 600
c. Fugitive Sources	15 000	2 100	44 000	0.1	40	-	-	-	60 000
Coal Mining	-	50	1 000	-	-	-	-	-	1 000
Oil and Natural Gas	15 000	2 100	43 000	0.1	40	-	-	-	59 000
Oil	210	270	5 700	0.1	30	-	-	-	5 900
Natural Gas	70	910	19 000	-	-	-	-	-	19 000
Venting	10 000	880	19 000	-	-	-	-	-	29 000
Flaring	4 600	3.7	78	0.02	6	-	-	-	4 700
INDUSTRIAL PROCESSES	44 000	2.7	56	3.78	1 170	7 500	1 500	420	54 700
a. Mineral Products	7 800	-	-	-	-	-	-	-	7 800
Cement Production	5 700	-	-	-	-	-	-	-	5 700
Lime Production	1 430	-	-	-	-	-	-	-	1 430
Mineral Product Use	670	-	-	-	-	-	-	-	670
b. Chemical Industry³	5 700	2.7	56	3.8	1 200	-	-	-	7 000
Ammonia Production	5 750	-	-	-	-	-	-	-	5 750
Nitric Acid Production	-	-	-	3.8	1 200	-	-	-	1 200
Adipic Acid Production	-	-	-	0.0	0.21	-	-	-	0.21
Petrochemical Production ⁴	-	2.7	56	0.03	7.9	-	-	-	64
c. Metal Production	14 900	-	-	-	-	-	1 440	277	16 600
Iron and Steel Production	9 860	-	-	-	-	-	-	-	9 860
Aluminum Production	5 070	-	-	-	-	-	1 440	76.8	6 580
SF ₆ Used in Magnesium Smelters and Casters	-	-	-	-	-	-	-	200	200
d. Production and Consumption of Halocarbons and SF₆⁵	-	-	-	-	-	7 500	16	150	7 700
e. Other & Undifferentiated Production	15 000	-	-	-	-	-	-	-	15 000
SOLVENT & OTHER PRODUCT USE	-	-	-	0.8	250	-	-	-	250
AGRICULTURE	-	960	20 000	100	30 000	-	-	-	53 000
a. Enteric Fermentation	-	830	17 000	-	-	-	-	-	17 000
b. Manure Management	-	130	2 800	11.6	3 580	-	-	-	6 300
c. Agriculture Soils	-	-	-	94	29 000	-	-	-	29 000
Direct Sources	-	-	-	51	16 000	-	-	-	16 000
Pasture, Range and Paddock Manure	-	-	-	8.5	2 600	-	-	-	2 600
Indirect Sources	-	-	-	30	10 000	-	-	-	10 000
d. Field Burning of Agricultural Residues	-	0.9	20	0.02	7	-	-	-	30
WASTE	480	910	19 000	3	900	-	-	-	20 000
a. Solid Waste Disposal on Land	-	890	19 000	-	-	-	-	-	19 000
b. Wastewater Handling	-	15	310	2	700	-	-	-	990
c. Waste Incineration	480	0.1	2	0.6	200	-	-	-	670
LAND USE, LAND-USE CHANGE AND FORESTRY	59 000	520	11 000	22	6 700	-	-	-	77 000
a. Forest Land	52 000	490	10 000	21	6 400	-	-	-	69 000
b. Cropland	-5 000	5	100	0.3	80	-	-	-	-4 800
c. Grassland	-	20	400	0.5	200	-	-	-	600
d. Wetlands	3 000	-	-	-	-	-	-	-	3 000
e. Settlements	9 000	6	100	0.2	70	-	-	-	10 000

Notes:

- National totals exclude all GHGs from the Land Use, Land-use Change and Forestry sector.
 - Emissions from ethanol and biodiesel are included in the Transport categories using gasoline and diesel respectively.
 - Emissions from the Ammonia Production, Nitric Acid Production and Petrochemical Production subcategories are included in Other & Undifferentiated Production within the provincial/territorial tables.
 - The category Petrochemical Production includes CH₄ and N₂O emissions. CO₂ emissions are included in Other & Undifferentiated Production.
 - HFC emissions occurring as a by-product of HCFC production (HCFC-22 exclusively) only occurred in Canada from 1990–1992. HFC consumption began in 1995
- Indicates no emissions
0.0 Indicates emissions truncated due to rounding

Table A12-5 2010 GHG Emission Summary for Canada

Greenhouse Gas Categories	Greenhouse Gases								
	CO ₂	CH ₄	CH ₄	N ₂ O	N ₂ O	HFCs	PFCs	SF ₆	TOTAL
	Global Warming Potential Unit	kt	kt	21 kt CO ₂ equivalent	kt	310 kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent
TOTAL¹	554 000	4 200	89 000	150	47 000	7 100	1 600	460	699 000
ENERGY	510 000	2 300	49 000	30	10 000	-	-	-	570 000
a. Stationary Combustion Sources	306 000	200	4 000	8	3 000	-	-	-	313 000
Electricity and Heat Generation	100 000	5.8	120	2	600	-	-	-	101 000
Fossil Fuel Production and Refining	60 500	90	2 000	1	300	-	-	-	63 000
Petroleum Refining	17 800	0.23	4.7	0.13	41	-	-	-	17 800
Fossil Fuel Production	43 000	86	1 800	0.91	282	-	-	-	45 000
Mining & Oil and Gas Extraction	34 500	0.67	14	0.7	200	-	-	-	34 700
Manufacturing Industries	40 400	3	50	2	600	-	-	-	41 100
Iron and Steel	4 380	0.2	4	0.2	50	-	-	-	4 440
Non Ferrous Metals	2 940	0.05	1	0.04	10	-	-	-	2 950
Chemical	9 800	0.19	4	0.2	50	-	-	-	9 860
Pulp and Paper	5 660	2	30	1	400	-	-	-	6 070
Cement	4 010	0.2	4.3	0.05	10	-	-	-	4 030
Other Manufacturing	13 600	0.27	5.6	0.3	90	-	-	-	13 700
Construction	1 490	0.03	0.55	0.04	10	-	-	-	1 500
Commercial & Institutional	27 800	0.53	11	0.6	200	-	-	-	28 000
Residential	38 600	100	2 000	2	600	-	-	-	41 300
Agriculture & Forestry	2 850	0.05	1.1	0.08	24	-	-	-	2 880
b. Transport²	189 000	30	600	30	8 000	-	-	-	198 000
Civil Aviation (Domestic Aviation)	6 360	0.3	7	0.2	60	-	-	-	6 400
Road Transportation	130 000	10	200	11	3 500	-	-	-	134 000
Light-Duty Gasoline Vehicles	38 700	3.6	75	3.9	1 200	-	-	-	40 000
Light-Duty Gasoline Trucks	41 500	3.9	81	4.3	1 300	-	-	-	42 900
Heavy-Duty Gasoline Vehicles	6 840	0.3	6.2	0.56	170	-	-	-	7 020
Motorcycles	268	0.11	2.2	0.01	1.6	-	-	-	271
Light-Duty Diesel Vehicles	731	0.01	0.3	0.06	20	-	-	-	750
Light-Duty Diesel Trucks	2 040	0.05	1	0.2	50	-	-	-	2 090
Heavy-Duty Diesel Vehicles	39 500	2	40	2	700	-	-	-	40 200
Propane & Natural Gas Vehicles	758	0.7	20	0.02	5	-	-	-	780
Railways	5 820	0.3	7	2	800	-	-	-	6 600
Navigation (Domestic Marine)	6 640	0.5	10	1	300	-	-	-	7 000
Other Transportation	39 900	20	300	10	4 000	-	-	-	44 000
Off-Road Gasoline	7 680	10	200	0.2	50	-	-	-	7 900
Off-Road Diesel	26 800	1	30	10	3 000	-	-	-	30 000
Pipelines	5 500	5.6	120	0.2	50	-	-	-	5 670
c. Fugitive Sources	15 000	2 100	44 000	0.1	40	-	-	-	58 000
Coal Mining	-	50	1 000	-	-	-	-	-	1 000
Oil and Natural Gas	15 000	2 000	43 000	0.1	40	-	-	-	57 000
Oil	210	260	5 500	0.1	30	-	-	-	5 700
Natural Gas	68	910	19 000	-	-	-	-	-	19 000
Venting	10 000	870	18 000	-	-	-	-	-	28 000
Flaring	4 200	3.9	81	0.02	8	-	-	-	4 300
INDUSTRIAL PROCESSES	43 800	2.7	56	3.58	1 110	7 100	1 600	460	54 100
a. Mineral Products	7 600	-	-	-	-	-	-	-	7 600
Cement Production	5 700	-	-	-	-	-	-	-	5 700
Lime Production	1 370	-	-	-	-	-	-	-	1 370
Mineral Product Use	540	-	-	-	-	-	-	-	540
b. Chemical Industry³	5 300	2.7	56	3.6	1 100	-	-	-	6 500
Ammonia Production	5 300	-	-	-	-	-	-	-	5 300
Nitric Acid Production	-	-	-	3.6	1 100	-	-	-	1 100
Adipic Acid Production	-	-	-	0.0	0.2	-	-	-	0.2
Petrochemical Production ⁴	-	2.7	56	0.03	7.9	-	-	-	64
c. Metal Production	14 000	-	-	-	-	-	1 600	266	15 800
Iron and Steel Production	9 030	-	-	-	-	-	-	-	9 030
Aluminum Production	4 950	-	-	-	-	-	1 600	76.2	6 620
SF ₆ Used in Magnesium Smelters and Casters	-	-	-	-	-	-	-	190	190
d. Production and Consumption of Halocarbons and SF₆⁵	-	-	-	-	-	7 100	10	190	7 300
e. Other & Undifferentiated Production	17 000	-	-	-	-	-	-	-	17 000
SOLVENT & OTHER PRODUCT USE	-	-	-	0.78	240	-	-	-	240
AGRICULTURE	-	1 000	21 000	100	30 000	-	-	-	55 000
a. Enteric Fermentation	-	860	18 000	-	-	-	-	-	18 000
b. Manure Management	-	130	2 800	12.1	3 740	-	-	-	6 500
c. Agriculture Soils	-	-	-	98	30 000	-	-	-	30 000
Direct Sources	-	-	-	53	17 000	-	-	-	17 000
Pasture, Range and Paddock Manure	-	-	-	9.1	2 800	-	-	-	2 800
Indirect Sources	-	-	-	40	10 000	-	-	-	10 000
d. Field Burning of Agricultural Residues	-	1	20	0.03	8	-	-	-	30
WASTE	490	900	19 000	3	900	-	-	-	20 000
a. Solid Waste Disposal on Land	-	890	19 000	-	-	-	-	-	19 000
b. Wastewater Handling	-	15	310	2	700	-	-	-	990
c. Waste Incineration	490	0.1	2	0.6	200	-	-	-	680
LAND USE, LAND-USE CHANGE AND FORESTRY	58 000	510	11 000	21	6 600	-	-	-	76 000
a. Forest Land	51 000	490	10 000	21	6 400	-	-	-	68 000
b. Cropland	-5 200	5	100	0.2	70	-	-	-	-5 000
c. Grassland	-	10	200	0.3	80	-	-	-	300
d. Wetlands	3 000	1	-	-	10	-	-	-	3 000
e. Settlements	9 000	6	100	0.2	70	-	-	-	10 000

Notes:

- National totals exclude all GHGs from the Land Use, Land-use Change and Forestry sector.
- Emissions from ethanol and biodiesel are included in the Transport categories using gasoline and diesel respectively.
- Emissions from the Ammonia Production, Nitric Acid Production and Petrochemical Production subcategories are included in Other & Undifferentiated Production within the provincial/territorial tables.
- The category Petrochemical Production includes CH₄ and N₂O emissions. CO₂ emissions are included in Other & Undifferentiated Production.
- HFC emissions occurring as a by-product of HCFC production (HCFC-22 exclusively) only occurred in Canada from 1990–1992. HFC consumption began in 1995.
- Indicates no emissions
- 0.0 Indicates emissions truncated due to rounding

Table A12–6 2009 GHG Emission Summary for Canada

Greenhouse Gas Categories	Greenhouse Gases								
	CO ₂	CH ₄	CH ₄	N ₂ O	N ₂ O	HFCs	PFCs	SF ₆	TOTAL
	Global Warming Potential Unit	kt	kt	21 kt CO ₂ equivalent	kt	310 kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent
TOTAL¹	543 000	4 300	91 000	150	47 000	6 300	2 200	390	689 000
ENERGY	501 000	2 300	49 000	30	10 000	-	-	-	560 000
a. Stationary Combustion Sources	306 000	200	4 000	8	3 000	-	-	-	313 000
Electricity and Heat Generation	98 400	4.9	100	2	600	-	-	-	99 100
Fossil Fuel Production and Refining	62 500	90	2 000	1	300	-	-	-	65 000
Petroleum Refining	18 900	0.27	5.6	0.14	42	-	-	-	18 900
Fossil Fuel Production	44 000	89	1 900	0.93	288	-	-	-	46 000
Mining & Oil and Gas Extraction	31 400	0.63	13	0.7	200	-	-	-	31 700
Manufacturing Industries	39 600	3	50	2	600	-	-	-	40 300
Iron and Steel	4 230	0.2	4	0.1	50	-	-	-	4 280
Non Ferrous Metals	2 800	0.05	1	0.04	10	-	-	-	2 810
Chemical	8 780	0.17	3.6	0.2	50	-	-	-	8 830
Pulp and Paper	6 080	2	40	1	400	-	-	-	6 510
Cement	4 460	0.21	4.5	0.05	20	-	-	-	4 480
Other Manufacturing	13 300	0.27	5.6	0.3	80	-	-	-	13 400
Construction	1 200	0.02	0.44	0.03	9	-	-	-	1 210
Commercial & Institutional	29 200	0.56	12	0.6	200	-	-	-	29 400
Residential	41 300	100	2 000	2	600	-	-	-	43 900
Agriculture & Forestry	2 510	0.05	0.94	0.07	21	-	-	-	2 530
b. Transport²	180 000	30	600	20	8 000	-	-	-	188 000
Civil Aviation (Domestic Aviation)	6 350	0.4	8	0.2	60	-	-	-	6 400
Road Transportation	128 000	10	200	12	3 700	-	-	-	132 000
Light-Duty Gasoline Vehicles	38 200	3.6	76	4.3	1 300	-	-	-	39 700
Light-Duty Gasoline Trucks	40 900	3.9	82	4.9	1 500	-	-	-	42 500
Heavy-Duty Gasoline Vehicles	6 740	0.3	6.3	0.53	170	-	-	-	6 910
Motorcycles	262	0.1	2.2	0.0	1.5	-	-	-	266
Light-Duty Diesel Vehicles	682	0.01	0.3	0.06	20	-	-	-	699
Light-Duty Diesel Trucks	1 980	0.05	1	0.2	50	-	-	-	2 030
Heavy-Duty Diesel Vehicles	38 400	2	30	2	700	-	-	-	39 000
Propane & Natural Gas Vehicles	763	0.7	20	0.02	5	-	-	-	780
Railways	4 510	0.3	5	2	600	-	-	-	5 100
Navigation (Domestic Marine)	6 360	0.5	10	1	300	-	-	-	6 700
Other Transportation	34 900	20	300	9	3 000	-	-	-	38 000
Off-Road Gasoline	7 020	9	200	0.2	50	-	-	-	7 300
Off-Road Diesel	21 800	1	30	9	3 000	-	-	-	25 000
Pipelines	6 130	6.2	130	0.2	50	-	-	-	6 310
c. Fugitive Sources	15 000	2 100	44 000	0.1	40	-	-	-	59 000
Coal Mining	-	40	900	-	-	-	-	-	900
Oil and Natural Gas	15 000	2 100	43 000	0.1	40	-	-	-	58 000
Oil	200	250	5 300	0.1	30	-	-	-	5 500
Natural Gas	67	920	19 000	-	-	-	-	-	19 000
Venting	10 000	880	19 000	-	-	-	-	-	29 000
Flaring	4 300	4.2	88	0.03	9	-	-	-	4 400
INDUSTRIAL PROCESSES	41 000	2.6	55	5.87	1 820	6 300	2 200	390	51 800
a. Mineral Products	7 000	-	-	-	-	-	-	-	7 000
Cement Production	5 100	-	-	-	-	-	-	-	5 100
Lime Production	1 190	-	-	-	-	-	-	-	1 190
Mineral Product Use	720	-	-	-	-	-	-	-	720
b. Chemical Industry³	5 200	2.6	55	5.9	1 800	-	-	-	7 100
Ammonia Production	5 230	-	-	-	-	-	-	-	5 230
Nitric Acid Production	-	-	-	3.7	1 100	-	-	-	1 100
Adipic Acid Production	-	-	-	2.1	660	-	-	-	660
Petrochemical Production ⁴	-	2.6	55	0.02	7	-	-	-	62
c. Metal Production	13 100	-	-	-	-	-	2 160	207	15 400
Iron and Steel Production	8 030	-	-	-	-	-	-	-	8 030
Aluminum Production	5 030	-	-	-	-	-	2 160	13.7	7 200
SF ₆ Used in Magnesium Smelters and Casters	-	-	-	-	-	-	-	193	193
d. Production and Consumption of Halocarbons and SF₆⁵	-	-	-	-	-	6 300	8.6	190	6 500
e. Other & Undifferentiated Production	16 000	-	-	-	-	-	-	-	16 000
SOLVENT & OTHER PRODUCT USE	-	-	-	0.84	260	-	-	-	260
AGRICULTURE	-	1 000	22 000	100	30 000	-	-	-	56 000
a. Enteric Fermentation	-	900	19 000	-	-	-	-	-	19 000
b. Manure Management	-	130	2 800	12.4	3 840	-	-	-	6 600
c. Agriculture Soils	-	-	-	97	30 000	-	-	-	30 000
Direct Sources	-	-	-	52	16 000	-	-	-	16 000
Pasture, Range and Paddock Manure	-	-	-	9.5	2 900	-	-	-	2 900
Indirect Sources	-	-	-	40	10 000	-	-	-	10 000
d. Field Burning of Agricultural Residues	-	2	30	0.04	10	-	-	-	40
WASTE	490	970	20 000	3	900	-	-	-	22 000
a. Solid Waste Disposal on Land	-	950	20 000	-	-	-	-	-	20 000
b. Wastewater Handling	-	15	310	2	700	-	-	-	980
c. Waste Incineration	490	0.1	2	0.6	200	-	-	-	680
LAND USE, LAND-USE CHANGE AND FORESTRY	-37 000	280	5 800	11	3 500	-	-	-	-27 000
a. Forest Land	-44 000	250	5 300	11	3 300	-	-	-	-35 000
b. Cropland	-5 100	5	100	0.2	70	-	-	-	-4 900
c. Grassland	-	10	300	0.3	100	-	-	-	400
d. Wetlands	3 000	1	-	-	10	-	-	-	3 000
e. Settlements	9 000	6	100	0.2	70	-	-	-	9 000

Notes:

- National totals exclude all GHGs from the Land Use, Land-use Change and Forestry sector.
 - Emissions from ethanol and biodiesel are included in the Transport categories using gasoline and diesel respectively.
 - Emissions from the Ammonia Production, Nitric Acid Production and Petrochemical Production subcategories are included in Other & Undifferentiated Production within the provincial/territorial tables.
 - The category Petrochemical Production includes CH₄ and N₂O emissions. CO₂ emissions are included in Other & Undifferentiated Production.
 - HFC emissions occurring as a by-product of HCFC production (HCFC-22 exclusively) only occurred in Canada from 1990–1992. HFC consumption began in 1995.
- Indicates no emissions
0.0 Indicates emissions truncated due to rounding

Table A12-7 2008 GHG Emission Summary for Canada

Greenhouse Gas Categories	Greenhouse Gases								
	CO ₂	CH ₄	CH ₄	N ₂ O	N ₂ O	HFCs	PFCs	SF ₆	TOTAL
	Global Warming Potential Unit	21	21	310	310	kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent
	kt	kt	kt CO ₂ equivalent	kt	kt CO ₂ equivalent				
TOTAL¹	577 000	4 500	94 000	170	52 000	5 600	2 300	680	731 000
ENERGY	529 000	2 400	51 000	40	10 000	-	-	-	592 000
a. Stationary Combustion Sources	327 000	200	4 000	9	3 000	-	-	-	334 000
Electricity and Heat Generation	114 000	5.3	110	2	700	-	-	-	115 000
Fossil Fuel Production and Refining	62 700	100	2 000	1	400	-	-	-	65 000
Petroleum Refining	19 400	0.28	5.9	0.15	45	-	-	-	19 500
Fossil Fuel Production	43 000	96	2 000	1	310	-	-	-	46 000
Mining & Oil and Gas Extraction	29 800	0.6	13	0.7	200	-	-	-	30 000
Manufacturing Industries	44 400	3	60	2	700	-	-	-	45 100
Iron and Steel	5 700	0.3	5	0.2	60	-	-	-	5 760
Non Ferrous Metals	3 730	0.08	2	0.05	20	-	-	-	3 750
Chemical	8 700	0.17	3.6	0.2	50	-	-	-	8 750
Pulp and Paper	5 940	2	40	1	400	-	-	-	6 400
Cement	4 880	0.25	5.1	0.06	20	-	-	-	4 910
Other Manufacturing	15 400	0.31	6.4	0.3	100	-	-	-	15 500
Construction	1 360	0.02	0.5	0.03	10	-	-	-	1 370
Commercial & Institutional	29 400	0.56	12	0.6	200	-	-	-	29 600
Residential	43 200	100	2 000	2	600	-	-	-	45 900
Agriculture & Forestry	2 590	0.05	0.94	0.07	22	-	-	-	2 610
b. Transport²	186 000	30	600	30	9 000	-	-	-	196 000
Civil Aviation (Domestic Aviation)	7 210	0.4	8	0.2	70	-	-	-	7 300
Road Transportation	127 000	10	200	13	4 100	-	-	-	132 000
Light-Duty Gasoline Vehicles	37 900	3.7	78	4.8	1 500	-	-	-	39 500
Light-Duty Gasoline Trucks	40 400	4	84	5.5	1 700	-	-	-	42 300
Heavy-Duty Gasoline Vehicles	6 630	0.33	7	0.52	160	-	-	-	6 800
Motorcycles	259	0.1	2.2	0.0	1.5	-	-	-	263
Light-Duty Diesel Vehicles	635	0.01	0.3	0.05	20	-	-	-	652
Light-Duty Diesel Trucks	1 970	0.05	1	0.2	50	-	-	-	2 020
Heavy-Duty Diesel Vehicles	38 500	2	30	2	600	-	-	-	39 200
Propane & Natural Gas Vehicles	856	0.8	20	0.02	5	-	-	-	880
Railways	6 970	0.4	8	3	900	-	-	-	7 900
Navigation (Domestic Marine)	6 150	0.5	10	1	300	-	-	-	6 500
Other Transportation	38 800	20	400	10	3 000	-	-	-	42 000
Off-Road Gasoline	7 060	9	200	0.2	50	-	-	-	7 300
Off-Road Diesel	24 500	1	30	10	3 000	-	-	-	28 000
Pipelines	7 240	7.3	150	0.2	60	-	-	-	7 460
c. Fugitive Sources	16 000	2 200	46 000	0.1	40	-	-	-	62 000
Coal Mining	-	40	900	-	-	-	-	-	900
Oil and Natural Gas	16 000	2 100	45 000	0.1	40	-	-	-	61 000
Oil	210	250	5 300	0.1	30	-	-	-	5 500
Natural Gas	68	940	20 000	-	-	-	-	-	20 000
Venting	11 000	960	20 000	-	-	-	-	-	31 000
Flaring	5 000	3.7	78	0.01	4	-	-	-	5 100
INDUSTRIAL PROCESSES	46 700	3.1	64	11.9	3 700	5 600	2 300	680	59 000
a. Mineral Products	9 000	-	-	-	-	-	-	-	9 000
Cement Production	6 600	-	-	-	-	-	-	-	6 600
Lime Production	1 540	-	-	-	-	-	-	-	1 540
Mineral Product Use	890	-	-	-	-	-	-	-	890
b. Chemical Industry³	5 600	3.1	64	12	3 700	-	-	-	9 400
Ammonia Production	5 600	-	-	-	-	-	-	-	5 600
Nitric Acid Production	-	-	-	4.1	1 300	-	-	-	1 300
Adipic Acid Production	-	-	-	7.8	2 400	-	-	-	2 400
Petrochemical Production ⁴	-	3.1	64	0.03	8.4	-	-	-	73
c. Metal Production	15 800	-	-	-	-	-	2 240	465	18 500
Iron and Steel Production	10 700	-	-	-	-	-	-	-	10 700
Aluminum Production	5 170	-	-	-	-	-	2 240	3.74	7 420
SF ₆ Used in Magnesium Smelters and Casters	-	-	-	-	-	-	-	462	462
d. Production and Consumption of Halocarbons and SF₆⁵	-	-	-	-	-	5 600	11	220	5 800
e. Other & Undifferentiated Production	16 000	-	-	-	-	-	-	-	16 000
SOLVENT & OTHER PRODUCT USE	-	-	-	1.1	340	-	-	-	340
AGRICULTURE	-	1 100	23 000	100	40 000	-	-	-	58 000
a. Enteric Fermentation	-	950	20 000	-	-	-	-	-	20 000
b. Manure Management	-	140	2 900	13	4 040	-	-	-	6 900
c. Agriculture Soils	-	-	-	100	31 000	-	-	-	31 000
Direct Sources	-	-	-	54	17 000	-	-	-	17 000
Pasture, Range and Paddock Manure	-	-	-	10	3 100	-	-	-	3 100
Indirect Sources	-	-	-	40	10 000	-	-	-	10 000
d. Field Burning of Agricultural Residues	-	2	30	0.04	10	-	-	-	40
WASTE	510	960	20 000	3	900	-	-	-	22 000
a. Solid Waste Disposal on Land	-	950	20 000	-	-	-	-	-	20 000
b. Wastewater Handling	-	15	310	2	700	-	-	-	970
c. Waste Incineration	510	0.1	2	0.7	200	-	-	-	710
LAND USE, LAND-USE CHANGE AND FORESTRY	-24 000	210	4 400	8.7	2 700	-	-	-	-17 000
a. Forest Land	-32 000	190	3 900	7.8	2 400	-	-	-	-26 000
b. Cropland	-5 100	5	100	0.2	70	-	-	-	-4 900
c. Grassland	-	10	300	0.4	100	-	-	-	400
d. Wetlands	3 000	1	-	-	10	-	-	-	3 000
e. Settlements	10 000	6	100	0.2	70	-	-	-	10 000

Notes:

- National totals exclude all GHGs from the Land Use, Land-use Change and Forestry sector.
 - Emissions from ethanol and biodiesel are included in the Transport categories using gasoline and diesel respectively.
 - Emissions from the Ammonia Production, Nitric Acid Production and Petrochemical Production subcategories are included in Other & Undifferentiated Production within the provincial/territorial tables.
 - The category Petrochemical Production includes CH₄ and N₂O emissions. CO₂ emissions are included in Other & Undifferentiated Production.
 - HFC emissions occurring as a by-product of HCFC production (HCFC-22 exclusively) only occurred in Canada from 1990–1992. HFC consumption began in 1995.
- Indicates no emissions
0.0 Indicates emissions truncated due to rounding

Table A12–8 2007 GHG Emission Summary for Canada

Greenhouse Gas Categories	Greenhouse Gases								
	CO ₂	CH ₄	CH ₄	N ₂ O	N ₂ O	HFCs	PFCs	SF ₆	TOTAL
	Global Warming Potential Unit	kt	kt	kt CO ₂ equivalent	kt	kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent
TOTAL¹	595 000	4 600	97 000	160	49 000	5 500	2 200	770	749 000
ENERGY	546 000	2 500	53 000	40	10 000	-	-	-	610 000
a. Stationary Combustion Sources	343 000	200	5 000	9	3 000	-	-	-	350 000
Electricity and Heat Generation	121 000	5.2	110	2	700	-	-	-	122 000
Fossil Fuel Production and Refining	68 300	100	2 000	1	400	-	-	-	71 000
Petroleum Refining	20 600	0.3	6.2	0.14	45	-	-	-	20 600
Fossil Fuel Production	48 000	100	2 200	1.08	336	-	-	-	50 000
Mining & Oil and Gas Extraction	28 700	0.57	12	0.6	200	-	-	-	28 900
Manufacturing Industries	46 800	3	60	2	700	-	-	-	47 600
Iron and Steel	5 920	0.3	6	0.2	60	-	-	-	5 990
Non Ferrous Metals	3 740	0.08	2	0.05	20	-	-	-	3 750
Chemical	8 620	0.17	3.6	0.1	50	-	-	-	8 670
Pulp and Paper	7 350	2	40	1	500	-	-	-	7 850
Cement	5 020	0.25	5.2	0.06	20	-	-	-	5 040
Other Manufacturing	16 200	0.32	6.8	0.3	100	-	-	-	16 300
Construction	1 380	0.02	0.51	0.03	10	-	-	-	1 390
Commercial & Institutional	30 000	0.56	12	0.6	200	-	-	-	30 200
Residential	43 900	100	2 000	2	600	-	-	-	46 600
Agriculture & Forestry	2 590	0.05	0.94	0.07	22	-	-	-	2 610
b. Transport²	187 000	30	700	30	9 000	-	-	-	196 000
Civil Aviation (Domestic Aviation)	7 610	0.3	7	0.2	70	-	-	-	7 700
Road Transportation	128 000	10	200	15	4 600	-	-	-	133 000
Light-Duty Gasoline Vehicles	38 200	3.9	82	5.5	1 700	-	-	-	40 000
Light-Duty Gasoline Trucks	40 600	4.1	87	6.4	2 000	-	-	-	42 700
Heavy-Duty Gasoline Vehicles	6 590	0.35	7.3	0.51	160	-	-	-	6 750
Motorcycles	258	0.1	2.2	0.0	1.5	-	-	-	262
Light-Duty Diesel Vehicles	601	0.01	0.3	0.05	20	-	-	-	616
Light-Duty Diesel Trucks	1 960	0.05	1	0.2	50	-	-	-	2 010
Heavy-Duty Diesel Vehicles	38 900	2	30	2	600	-	-	-	39 500
Propane & Natural Gas Vehicles	811	0.7	20	0.02	5	-	-	-	830
Railways	6 580	0.4	8	3	800	-	-	-	7 400
Navigation (Domestic Marine)	6 380	0.5	10	1	400	-	-	-	6 800
Other Transportation	38 400	20	400	10	3 000	-	-	-	42 000
Off-Road Gasoline	7 740	9	200	0.2	50	-	-	-	8 000
Off-Road Diesel	22 500	1	30	9	3 000	-	-	-	25 000
Pipelines	8 130	8.2	170	0.2	70	-	-	-	8 380
c. Fugitive Sources	16 000	2 300	47 000	0.1	40	-	-	-	63 000
Coal Mining	-	50	1 000	-	-	-	-	-	1 000
Oil and Natural Gas	16 000	2 200	46 000	0.1	40	-	-	-	62 000
Oil	220	270	5 600	0.1	30	-	-	-	5 800
Natural Gas	66	930	20 000	-	-	-	-	-	20 000
Venting	10 000	1 000	21 000	-	-	-	-	-	31 000
Flaring	5 200	3.6	76	0.01	2	-	-	-	5 300
INDUSTRIAL PROCESSES	48 700	3.4	71	8.5	2 640	5 500	2 200	770	59 800
a. Mineral Products	9 800	-	-	-	-	-	-	-	9 800
Cement Production	7 300	-	-	-	-	-	-	-	7 300
Lime Production	1 590	-	-	-	-	-	-	-	1 590
Mineral Product Use	850	-	-	-	-	-	-	-	850
b. Chemical Industry³	5 200	3.4	71	8.5	2 600	-	-	-	7 900
Ammonia Production	5 190	-	-	-	-	-	-	-	5 190
Nitric Acid Production	-	-	-	3.7	1 100	-	-	-	1 100
Adipic Acid Production	-	-	-	4.8	1 500	-	-	-	1 500
Petrochemical Production ⁴	-	3.4	71	0.03	10	-	-	-	81
c. Metal Production	16 200	-	-	-	-	-	2 180	535	18 900
Iron and Steel Production	11 100	-	-	-	-	-	-	-	11 100
Aluminum Production	5 100	-	-	-	-	-	2 180	12.4	7 290
SF ₆ Used in Magnesium Smelters and Casters	-	-	-	-	-	-	-	522	522
d. Production and Consumption of Halocarbons and SF₆⁵	-	-	-	-	-	5 500	9.4	240	5 700
e. Other & Undifferentiated Production	18 000	-	-	-	-	-	-	-	18 000
SOLVENT & OTHER PRODUCT USE	-	-	-	1.1	330	-	-	-	330
AGRICULTURE	-	1 100	24 000	100	30 000	-	-	-	58 000
a. Enteric Fermentation	-	980	21 000	-	-	-	-	-	21 000
b. Manure Management	-	150	3 100	13.4	4 150	-	-	-	7 200
c. Agriculture Soils	-	-	-	96	30 000	-	-	-	30 000
Direct Sources	-	-	-	50	16 000	-	-	-	16 000
Pasture, Range and Paddock Manure	-	-	-	10	3 200	-	-	-	3 200
Indirect Sources	-	-	-	30	10 000	-	-	-	10 000
d. Field Burning of Agricultural Residues	-	1	30	0.03	10	-	-	-	30
WASTE	470	970	20 000	3	900	-	-	-	22 000
a. Solid Waste Disposal on Land	-	960	20 000	-	-	-	-	-	20 000
b. Wastewater Handling	-	14	300	2	700	-	-	-	970
c. Waste Incineration	470	0.1	2	0.6	200	-	-	-	650
LAND USE, LAND-USE CHANGE AND FORESTRY	46 000	360	7 500	15	4 600	-	-	-	59 000
a. Forest Land	38 000	330	7 000	14	4 300	-	-	-	50 000
b. Cropland	-4 900	5	100	0.2	70	-	-	-	-4 700
c. Grassland	-	10	300	0.3	100	-	-	-	400
d. Wetlands	3 000	-	-	-	-	-	-	-	3 000
e. Settlements	10 000	7	100	0.3	80	-	-	-	10 000

Notes:

- National totals exclude all GHGs from the Land Use, Land-use Change and Forestry sector.
- Emissions from ethanol and biodiesel are included in the Transport categories using gasoline and diesel respectively.
- Emissions from the Ammonia Production, Nitric Acid Production and Petrochemical Production subcategories are included in Other & Undifferentiated Production within the provincial/territorial tables.
- The category Petrochemical Production includes CH₄ and N₂O emissions. CO₂ emissions are included in Other & Undifferentiated Production.
- Production of HFCs (HCFC-22 exclusively) only occurred in Canada from 1990-1992. HFC consumption began in 1995.
- Indicates no emissions
- 0.0 Indicates emissions truncated due to rounding

Table A12-9 2006 GHG Emission Summary for Canada

Greenhouse Gas Categories	Greenhouse Gases								
	CO ₂	CH ₄	CH ₄	N ₂ O	N ₂ O	HFCs	PFCs	SF ₆	TOTAL
	Global Warming Potential Unit	kt	kt	21 kt CO ₂ equivalent	kt	310 kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent
TOTAL¹	572 000	4 700	99 000	160	48 000	5 100	2 600	1 600	728 000
ENERGY	522 000	2 500	53 000	40	10 000	-	-	-	587 000
a. Stationary Combustion Sources	322 000	200	5 000	9	3 000	-	-	-	330 000
Electricity and Heat Generation	116 000	5.4	110	2	700	-	-	-	117 000
Fossil Fuel Production and Refining	66 500	100	2 000	1	400	-	-	-	69 000
Petroleum Refining	20 300	0.3	6.3	0.15	46	-	-	-	20 300
Fossil Fuel Production	46 000	100	2 100	1.1	340	-	-	-	49 000
Mining & Oil and Gas Extraction	21 800	0.43	9	0.5	200	-	-	-	21 900
Manufacturing Industries	45 700	3	70	2	700	-	-	-	46 400
Iron and Steel	5 470	0.3	5	0.2	60	-	-	-	5 540
Non Ferrous Metals	3 380	0.07	2	0.05	20	-	-	-	3 400
Chemical	8 780	0.18	3.7	0.2	50	-	-	-	8 830
Pulp and Paper	7 070	2	40	2	500	-	-	-	7 590
Cement	5 690	0.23	4.8	0.06	20	-	-	-	5 710
Other Manufacturing	15 300	0.31	6.5	0.3	90	-	-	-	15 400
Construction	1 380	0.02	0.51	0.03	10	-	-	-	1 390
Commercial & Institutional	28 900	0.54	11	0.6	200	-	-	-	29 100
Residential	39 700	100	2 000	2	600	-	-	-	42 400
Agriculture & Forestry	2 030	0.04	0.73	0.06	18	-	-	-	2 050
b. Transport²	183 000	30	700	30	9 000	-	-	-	193 000
Civil Aviation (Domestic Aviation)	7 680	0.3	6	0.2	70	-	-	-	7 800
Road Transportation	127 000	10	200	16	4 900	-	-	-	132 000
Light-Duty Gasoline Vehicles	38 300	4	83	6	1 900	-	-	-	40 200
Light-Duty Gasoline Trucks	40 600	4.1	87	7	2 200	-	-	-	42 900
Heavy-Duty Gasoline Vehicles	6 500	0.35	7.4	0.48	150	-	-	-	6 660
Motorcycles	255	0.11	2.2	0.0	1.5	-	-	-	258
Light-Duty Diesel Vehicles	565	0.01	0.2	0.05	10	-	-	-	579
Light-Duty Diesel Trucks	1 910	0.05	1	0.2	50	-	-	-	1 960
Heavy-Duty Diesel Vehicles	37 800	2	30	2	600	-	-	-	38 500
Propane & Natural Gas Vehicles	769	0.7	20	0.02	5	-	-	-	790
Railways	6 140	0.3	7	3	800	-	-	-	6 900
Navigation (Domestic Marine)	5 770	0.4	9	1	400	-	-	-	6 200
Other Transportation	37 000	20	400	9	3 000	-	-	-	40 000
Off-Road Gasoline	7 350	9	200	0.2	50	-	-	-	7 600
Off-Road Diesel	20 300	1	20	8	3 000	-	-	-	23 000
Pipelines	9 340	9.4	200	0.3	80	-	-	-	9 610
c. Fugitive Sources	16 000	2 300	48 000	0.1	40	-	-	-	64 000
Coal Mining	-	40	900	-	-	-	-	-	900
Oil and Natural Gas	16 000	2 200	47 000	0.1	40	-	-	-	64 000
Oil	190	260	5 500	0.1	30	-	-	-	5 700
Natural Gas	66	940	20 000	-	-	-	-	-	20 000
Venting	10 000	1 000	22 000	-	-	-	-	-	32 000
Flaring	5 900	4.1	86	0.01	3	-	-	-	6 000
INDUSTRIAL PROCESSES	49 200	3.4	70	7.91	2 450	5 100	2 600	1 600	61 000
a. Mineral Products	9 900	-	-	-	-	-	-	-	9 900
Cement Production	7 300	-	-	-	-	-	-	-	7 300
Lime Production	1 630	-	-	-	-	-	-	-	1 630
Mineral Product Use	970	-	-	-	-	-	-	-	970
b. Chemical Industry³	5 500	3.4	70	7.9	2 500	-	-	-	8 100
Ammonia Production	5 540	-	-	-	-	-	-	-	5 540
Nitric Acid Production	-	-	-	4	1 200	-	-	-	1 200
Adipic Acid Production	-	-	-	3.9	1 200	-	-	-	1 200
Petrochemical Production ⁴	-	3.4	70	0.03	9.7	-	-	-	80
c. Metal Production	16 300	-	-	-	-	-	2 580	1 410	20 300
Iron and Steel Production	11 200	-	-	-	-	-	-	-	11 200
Aluminum Production	5 090	-	-	-	-	-	2 580	13.1	7 680
SF ₆ Used in Magnesium Smelters and Casters	-	-	-	-	-	-	-	1 390	1 390
d. Production and Consumption of Halocarbons and SF₆⁵	-	-	-	-	-	5 100	8.3	190	5 300
e. Other & Undifferentiated Production	17 000	-	-	-	-	-	-	-	17 000
SOLVENT & OTHER PRODUCT USE	-	-	-	1.1	330	-	-	-	330
AGRICULTURE	-	1 200	24 000	100	30 000	-	-	-	57 000
a. Enteric Fermentation	-	1 000	21 000	-	-	-	-	-	21 000
b. Manure Management	-	150	3 200	13.7	4 240	-	-	-	7 400
c. Agriculture Soils	-	-	-	93	29 000	-	-	-	29 000
Direct Sources	-	-	-	48	15 000	-	-	-	15 000
Pasture, Range and Paddock Manure	-	-	-	11	3 400	-	-	-	3 400
Indirect Sources	-	-	-	30	10 000	-	-	-	10 000
d. Field Burning of Agricultural Residues	-	2	30	0.04	10	-	-	-	40
WASTE	490	990	21 000	3	900	-	-	-	22 000
a. Solid Waste Disposal on Land	-	980	21 000	-	-	-	-	-	21 000
b. Wastewater Handling	-	14	300	2	700	-	-	-	960
c. Waste Incineration	490	0.09	2	0.6	200	-	-	-	680
LAND USE, LAND-USE CHANGE AND FORESTRY	65 000	400	8 500	16	5 100	-	-	-	79 000
a. Forest Land	57 000	360	7 500	15	4 700	-	-	-	69 000
b. Cropland	-4 700	5	100	0.2	70	-	-	-	-4 500
c. Grassland	-	40	800	0.9	300	-	-	-	1 000
d. Wetlands	3 000	-	-	0.01	-	-	-	-	3 000
e. Settlements	10 000	7	100	0.3	80	-	-	-	10 000

Notes:

- National totals exclude all GHGs from the Land Use, Land-use Change and Forestry sector.
 - Emissions from ethanol and biodiesel are included in the Transport categories using gasoline and diesel respectively.
 - Emissions from the Ammonia Production, Nitric Acid Production and Petrochemical Production subcategories are included in Other & Undifferentiated Production within the provincial/territorial tables.
 - The category Petrochemical Production includes CH₄ and N₂O emissions. CO₂ emissions are included in Other & Undifferentiated Production.
 - HFC emissions occurring as a by-product of HCFC production (HCFC-22 exclusively) only occurred in Canada from 1990-1992. HFC consumption began in 1995.
- Indicates no emissions
0.0 Indicates emissions truncated due to rounding

Table A12–10 2005 GHG Emission Summary for Canada

Greenhouse Gas Categories	Greenhouse Gases								
	CO ₂	CH ₄	CH ₄	N ₂ O	N ₂ O	HFCs	PFCs	SF ₆	TOTAL
	Global Warming Potential Unit	kt	kt	21 kt CO ₂ equivalent	kt	310 kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent
TOTAL¹	577 000	4 700	99 000	160	50 000	5 300	3 300	1 500	736 000
ENERGY	530 000	2 500	53 000	40	10 000	-	-	-	595 000
a. Stationary Combustion Sources	331 000	200	4 000	9	3 000	-	-	-	338 000
Electricity and Heat Generation	122 000	5.3	110	2	700	-	-	-	123 000
Fossil Fuel Production and Refining	65 500	100	2 000	1	400	-	-	-	68 000
Petroleum Refining	20 100	0.35	7.3	0.16	50	-	-	-	20 200
Fossil Fuel Production	45 000	100	2 100	1.1	340	-	-	-	48 000
Mining & Oil and Gas Extraction	18 800	0.37	7.8	0.4	100	-	-	-	18 900
Manufacturing Industries	47 700	3	70	2	700	-	-	-	48 500
Iron and Steel	5 480	0.2	5	0.2	60	-	-	-	5 550
Non Ferrous Metals	3 550	0.08	2	0.05	20	-	-	-	3 570
Chemical	8 230	0.17	3.5	0.1	40	-	-	-	8 280
Pulp and Paper	8 200	2	50	2	500	-	-	-	8 740
Cement	5 350	0.21	4.5	0.06	20	-	-	-	5 380
Other Manufacturing	16 800	0.34	7.1	0.3	100	-	-	-	16 900
Construction	1 430	0.03	0.52	0.03	10	-	-	-	1 440
Commercial & Institutional	31 700	0.59	12	0.7	200	-	-	-	31 900
Residential	41 600	100	2 000	2	600	-	-	-	44 300
Agriculture & Forestry	2 080	0.04	0.74	0.06	18	-	-	-	2 100
b. Transport²	183 000	30	700	30	9 000	-	-	-	194 000
Civil Aviation (Domestic Aviation)	7 500	0.3	7	0.2	70	-	-	-	7 600
Road Transportation	125 000	10	200	17	5 300	-	-	-	130 000
Light-Duty Gasoline Vehicles	38 000	4.1	87	6.7	2 100	-	-	-	40 200
Light-Duty Gasoline Trucks	40 100	4.2	89	7.9	2 400	-	-	-	42 700
Heavy-Duty Gasoline Vehicles	6 390	0.37	7.7	0.46	140	-	-	-	6 540
Motorcycles	251	0.11	2.2	0.0	1.4	-	-	-	254
Light-Duty Diesel Vehicles	559	0.01	0.2	0.05	10	-	-	-	574
Light-Duty Diesel Trucks	1 870	0.05	1	0.2	50	-	-	-	1 920
Heavy-Duty Diesel Vehicles	37 000	2	30	2	600	-	-	-	37 600
Propane & Natural Gas Vehicles	705	0.7	10	0.01	4	-	-	-	720
Railways	5 860	0.3	7	2	800	-	-	-	6 600
Navigation (Domestic Marine)	6 250	0.5	10	1	400	-	-	-	6 700
Other Transportation	38 900	20	400	9	3 000	-	-	-	42 000
Off-Road Gasoline	8 050	10	200	0.2	50	-	-	-	8 300
Off-Road Diesel	21 100	1	20	9	3 000	-	-	-	24 000
Pipelines	9 780	9.8	210	0.3	80	-	-	-	10 100
c. Fugitive Sources	16 000	2 300	48 000	0.1	40	-	-	-	63 000
Coal Mining	-	50	1 000	-	-	-	-	-	1 000
Oil and Natural Gas	16 000	2 200	47 000	0.1	40	-	-	-	62 000
Oil	170	260	5 500	0.1	30	-	-	-	5 700
Natural Gas	61	910	19 000	-	-	-	-	-	19 000
Venting	9 900	1 100	22 000	-	-	-	-	-	32 000
Flaring	5 400	3.7	78	0.01	2	-	-	-	5 500
INDUSTRIAL PROCESSES	46 400	3.4	71	12.6	3 910	5 300	3 300	1 500	60 400
a. Mineral Products	9 900	-	-	-	-	-	-	-	9 900
Cement Production	7 200	-	-	-	-	-	-	-	7 200
Lime Production	1 710	-	-	-	-	-	-	-	1 710
Mineral Product Use	1 000	-	-	-	-	-	-	-	1 000
b. Chemical Industry³	5 300	3.4	71	13	3 900	-	-	-	9 300
Ammonia Production	5 350	-	-	-	-	-	-	-	5 350
Nitric Acid Production	-	-	-	4	1 300	-	-	-	1 300
Adipic Acid Production	-	-	-	8.5	2 600	-	-	-	2 600
Petrochemical Production ⁴	-	3.4	71	0.03	7.7	-	-	-	79
c. Metal Production	15 100	-	-	-	-	-	3 310	1 310	19 700
Iron and Steel Production	10 200	-	-	-	-	-	-	-	10 200
Aluminum Production	4 840	-	-	-	-	-	3 310	17.6	8 170
SF ₆ Used in Magnesium Smelters and Casters	-	-	-	-	-	-	-	1 290	1 290
d. Production and Consumption of Halocarbons and SF₆⁵	-	-	-	-	-	5 300	8.6	180	5 500
e. Other & Undifferentiated Production	16 000	-	-	-	-	-	-	-	16 000
SOLVENT & OTHER PRODUCT USE	-	-	-	1.2	380	-	-	-	380
AGRICULTURE	-	1 200	25 000	100	30 000	-	-	-	58 000
a. Enteric Fermentation	-	1 000	22 000	-	-	-	-	-	22 000
b. Manure Management	-	150	3 200	14	4 340	-	-	-	7 500
c. Agriculture Soils	-	-	-	93	29 000	-	-	-	29 000
Direct Sources	-	-	-	48	15 000	-	-	-	15 000
Pasture, Range and Paddock Manure	-	-	-	11	3 400	-	-	-	3 400
Indirect Sources	-	-	-	30	10 000	-	-	-	10 000
d. Field Burning of Agricultural Residues	-	1	30	0.04	10	-	-	-	40
WASTE	500	970	20 000	3	900	-	-	-	22 000
a. Solid Waste Disposal on Land	-	960	20 000	-	-	-	-	-	20 000
b. Wastewater Handling	-	14	300	2	700	-	-	-	950
c. Waste Incineration	500	0.09	2	0.7	200	-	-	-	700
LAND USE, LAND-USE CHANGE AND FORESTRY	44 000	290	6 200	12	3 700	-	-	-	53 000
a. Forest Land	35 000	260	5 400	11	3 300	-	-	-	44 000
b. Cropland	-3 900	5	100	0.2	70	-	-	-	-3 800
c. Grassland	-	30	500	0.7	200	-	-	-	800
d. Wetlands	3 000	-	-	0.1	-	-	-	-	3 000
e. Settlements	9 000	6	100	0.2	70	-	-	-	10 000

Notes:

- National totals exclude all GHGs from the Land Use, Land-use Change and Forestry sector.
 - Emissions from ethanol and biodiesel are included in the Transport categories using gasoline and diesel respectively.
 - Emissions from the Ammonia Production, Nitric Acid Production and Petrochemical Production subcategories are included in Other & Undifferentiated Production within the provincial/territorial tables.
 - The category Petrochemical Production includes CH₄ and N₂O emissions. CO₂ emissions are included in Other & Undifferentiated Production.
 - Production of HFCs (HCFC-22 exclusively) only occurred in Canada from 1990-1992. HFC consumption began in 1995.
- Indicates no emissions
0.0 Indicates emissions truncated due to rounding

Table A12-11 2004 GHG Emission Summary for Canada

Greenhouse Gas Categories	Greenhouse Gases								
	CO ₂	CH ₄	CH ₄	N ₂ O	N ₂ O	HFCs	PFCs	SF ₆	TOTAL
	Global Warming Potential Unit	kt	kt	21 kt CO ₂ equivalent	kt	310 kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent
TOTAL¹	583 000	4 700	98 000	170	52 000	4 800	3 000	2 500	744 000
ENERGY	536 000	2 500	54 000	40	10 000	-	-	-	602 000
a. Stationary Combustion Sources	341 000	200	5 000	9	3 000	-	-	-	348 000
Electricity and Heat Generation	123 000	5.3	110	2	700	-	-	-	124 000
Fossil Fuel Production and Refining	70 900	100	2 000	1	400	-	-	-	74 000
Petroleum Refining	21 500	0.38	8	0.18	55	-	-	-	21 500
Fossil Fuel Production	49 000	110	2 300	1.2	371	-	-	-	52 000
Mining & Oil and Gas Extraction	16 800	0.33	7	0.4	100	-	-	-	16 900
Manufacturing Industries	50 200	3	70	2	700	-	-	-	51 000
Iron and Steel	5 760	0.3	5	0.2	60	-	-	-	5 830
Non Ferrous Metals	3 500	0.08	2	0.05	20	-	-	-	3 520
Chemical	9 080	0.18	3.9	0.2	50	-	-	-	9 140
Pulp and Paper	9 780	2	50	2	500	-	-	-	10 300
Cement	5 400	0.25	5.2	0.06	20	-	-	-	5 420
Other Manufacturing	16 700	0.34	7.1	0.3	90	-	-	-	16 800
Construction	1 400	0.03	0.52	0.03	10	-	-	-	1 410
Commercial & Institutional	33 400	0.61	13	0.7	200	-	-	-	33 600
Residential	42 400	100	2 000	2	600	-	-	-	45 100
Agriculture & Forestry	2 180	0.04	0.77	0.06	18	-	-	-	2 200
b. Transport²	179 000	30	700	30	10 000	-	-	-	190 000
Civil Aviation (Domestic Aviation)	7 390	0.3	6	0.2	70	-	-	-	7 500
Road Transportation	123 000	10	200	19	5 800	-	-	-	129 000
Light-Duty Gasoline Vehicles	38 900	4.4	93	7.6	2 400	-	-	-	41 400
Light-Duty Gasoline Trucks	38 800	4.3	90	8.6	2 700	-	-	-	41 600
Heavy-Duty Gasoline Vehicles	6 490	0.4	8.4	0.45	140	-	-	-	6 630
Motorcycles	244	0.11	2.3	0.0	1.4	-	-	-	248
Light-Duty Diesel Vehicles	555	0.01	0.3	0.04	10	-	-	-	569
Light-Duty Diesel Trucks	1 790	0.05	1	0.1	40	-	-	-	1 840
Heavy-Duty Diesel Vehicles	35 400	2	30	2	600	-	-	-	36 000
Propane & Natural Gas Vehicles	837	0.7	20	0.02	5	-	-	-	860
Railways	5 500	0.3	6	2	700	-	-	-	6 200
Navigation (Domestic Marine)	6 540	0.5	10	1	400	-	-	-	7 000
Other Transportation	36 900	20	400	9	3 000	-	-	-	40 000
Off-Road Gasoline	8 660	10	200	0.2	60	-	-	-	8 900
Off-Road Diesel	20 000	1	20	8	3 000	-	-	-	23 000
Pipelines	8 230	8.3	170	0.2	70	-	-	-	8 470
c. Fugitive Sources	16 000	2 300	48 000	0.1	40	-	-	-	64 000
Coal Mining	-	40	900	-	-	-	-	-	900
Oil and Natural Gas	16 000	2 300	47 000	0.1	40	-	-	-	63 000
Oil	180	270	5 700	0.1	30	-	-	-	5 900
Natural Gas	57	890	19 000	-	-	-	-	-	19 000
Venting	10 000	1 100	23 000	-	-	-	-	-	33 000
Flaring	5 500	3.8	80	0.01	2	-	-	-	5 600
INDUSTRIAL PROCESSES	46 600	4.2	88	14	4 330	4 800	3 000	2 500	61 300
a. Mineral Products	9 800	-	-	-	-	-	-	-	9 800
Cement Production	7 100	-	-	-	-	-	-	-	7 100
Lime Production	1 780	-	-	-	-	-	-	-	1 780
Mineral Product Use ³	970	-	-	-	-	-	-	-	970
b. Chemical Industry³	5 800	4.2	88	14	4 300	-	-	-	10 000
Ammonia Production	5 760	-	-	-	-	-	-	-	5 760
Nitric Acid Production	-	-	-	4	1 200	-	-	-	1 200
Adipic Acid Production	-	-	-	10	3 100	-	-	-	3 100
Petrochemical Production ⁴	-	4.2	88	0.03	9.8	-	-	-	98
c. Metal Production	14 800	-	-	-	-	-	3 040	2 220	20 000
Iron and Steel Production	10 500	-	-	-	-	-	-	-	10 500
Aluminum Production	4 220	-	-	-	-	-	3 040	31.9	7 290
SF ₆ Used in Magnesium Smelters and Casters	-	-	-	-	-	-	-	2 190	2 190
d. Production and Consumption of Halocarbons and SF₆⁵	-	-	-	-	-	4 800	8.5	240	5 000
e. Other & Undifferentiated Production	16 000	-	-	-	-	-	-	-	16 000
SOLVENT & OTHER PRODUCT USE	-	-	-	1.3	410	-	-	-	410
AGRICULTURE	-	1 200	25 000	100	30 000	-	-	-	58 000
a. Enteric Fermentation	-	1 000	21 000	-	-	-	-	-	21 000
b. Manure Management	-	150	3 200	13.7	4 260	-	-	-	7 400
c. Agriculture Soils	-	-	-	94	29 000	-	-	-	29 000
Direct Sources	-	-	-	49	15 000	-	-	-	15 000
Pasture, Range and Paddock Manure	-	-	-	11	3 300	-	-	-	3 300
Indirect Sources	-	-	-	30	10 000	-	-	-	10 000
d. Field Burning of Agricultural Residues	-	1	20	0.03	9	-	-	-	30
WASTE	500	960	20 000	3	900	-	-	-	22 000
a. Solid Waste Disposal on Land	-	950	20 000	-	-	-	-	-	20 000
b. Wastewater Handling	-	14	290	2	700	-	-	-	950
c. Waste Incineration	500	0.09	2	0.7	200	-	-	-	710
LAND USE, LAND-USE CHANGE AND FORESTRY	110 000	570	12 000	24	7 400	-	-	-	130 000
a. Forest Land	100 000	530	11 000	22	7 000	-	-	-	120 000
b. Cropland	-3 200	5	100	0.2	80	-	-	-	-3 000
c. Grassland	-	30	600	0.7	200	-	-	-	800
d. Wetlands	3 000	1	-	-	-	-	-	-	3 000
e. Settlements	9 000	6	100	0.2	70	-	-	-	10 000

Notes:

- National totals exclude all GHGs from the Land Use, Land-use Change and Forestry sector.
- Emissions from ethanol and biodiesel are included in the Transport categories using gasoline and diesel respectively.
- Emissions from the Ammonia Production, Nitric Acid Production and Petrochemical Production subcategories are included in Other & Undifferentiated Production within the provincial/territorial tables.
- The category Petrochemical Production includes CH₄ and N₂O emissions. CO₂ emissions are included in Other & Undifferentiated Production.
- HFC emissions occurring as a by-product of HCFC production (HCFC-22 exclusively) only occurred in Canada from 1990-1992. HFC consumption began in 1995.
- Indicates no emissions
- 0.0 Indicates emissions truncated due to rounding

Table A12–12 2003 GHG Emission Summary for Canada

Greenhouse Gas Categories	Greenhouse Gases								
	CO ₂	CH ₄	CH ₄	N ₂ O	N ₂ O	HFCs	PFCs	SF ₆	TOTAL
	Global Warming Potential Unit	kt	kt	21 kt CO ₂ equivalent	kt	310 kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent
TOTAL¹	584 000	4 600	97 000	160	49 000	4 400	3 000	2 800	740 000
ENERGY	540 000	2 500	53 000	40	10 000	-	-	-	605 000
a. Stationary Combustion Sources	349 000	200	5 000	9	3 000	-	-	-	356 000
Electricity and Heat Generation	130 000	5.2	110	2	800	-	-	-	131 000
Fossil Fuel Production and Refining	70 600	100	2 000	1	400	-	-	-	74 000
Petroleum Refining	20 000	0.28	5.9	0.17	51	-	-	-	20 100
Fossil Fuel Production	51 000	120	2 500	1.26	391	-	-	-	53 000
Mining & Oil and Gas Extraction	17 500	0.35	7.4	0.4	100	-	-	-	17 700
Manufacturing Industries	48 600	3	60	2	700	-	-	-	49 300
Iron and Steel	5 470	0.2	5	0.2	60	-	-	-	5 530
Non Ferrous Metals	3 480	0.08	2	0.05	20	-	-	-	3 500
Chemical	8 290	0.17	3.5	0.1	40	-	-	-	8 330
Pulp and Paper	10 000	2	40	1	400	-	-	-	10 500
Cement	4 920	0.22	4.6	0.06	20	-	-	-	4 940
Other Manufacturing	16 400	0.33	7	0.3	90	-	-	-	16 500
Construction	1 330	0.02	0.49	0.03	9	-	-	-	1 340
Commercial & Institutional	34 700	0.64	13	0.7	200	-	-	-	34 900
Residential	44 000	100	2 000	2	600	-	-	-	46 600
Agriculture & Forestry	2 270	0.04	0.81	0.06	18	-	-	-	2 290
b. Transport²	174 000	30	700	30	10 000	-	-	-	185 000
Civil Aviation (Domestic Aviation)	6 900	0.3	7	0.2	60	-	-	-	7 000
Road Transportation	119 000	10	200	20	6 100	-	-	-	125 000
Light-Duty Gasoline Vehicles	39 000	4.7	98	8.4	2 600	-	-	-	41 700
Light-Duty Gasoline Trucks	37 200	4.2	89	9.1	2 800	-	-	-	40 100
Heavy-Duty Gasoline Vehicles	6 150	0.41	8.6	0.41	130	-	-	-	6 280
Motorcycles	226	0.1	2.2	0.0	1.3	-	-	-	229
Light-Duty Diesel Vehicles	511	0.01	0.2	0.04	10	-	-	-	524
Light-Duty Diesel Trucks	1 720	0.04	0.9	0.1	40	-	-	-	1 770
Heavy-Duty Diesel Vehicles	33 100	1	30	2	500	-	-	-	33 700
Propane & Natural Gas Vehicles	794	0.7	10	0.02	5	-	-	-	810
Railways	5 350	0.3	6	2	700	-	-	-	6 000
Navigation (Domestic Marine)	6 150	0.5	10	1	300	-	-	-	6 500
Other Transportation	37 300	20	400	9	3 000	-	-	-	40 000
Off-Road Gasoline	8 490	10	200	0.2	60	-	-	-	8 800
Off-Road Diesel	20 000	1	20	8	3 000	-	-	-	23 000
Pipelines	8 790	8.8	190	0.2	70	-	-	-	9 050
c. Fugitive Sources	16 000	2 300	47 000	0.1	40	-	-	-	64 000
Coal Mining	-	40	800	-	-	-	-	-	800
Oil and Natural Gas	16 000	2 200	47 000	0.1	40	-	-	-	63 000
Oil	170	270	5 600	0.1	30	-	-	-	5 800
Natural Gas	55	870	18 000	-	-	-	-	-	18 000
Venting	11 000	1 100	23 000	-	-	-	-	-	33 000
Flaring	5 600	3.7	77	0.0	1	-	-	-	5 700
INDUSTRIAL PROCESSES	44 000	3.7	78	7.61	2 360	4 400	3 000	2 800	56 700
a. Mineral Products	9 400	-	-	-	-	-	-	-	9 400
Cement Production	6 800	-	-	-	-	-	-	-	6 800
Lime Production	1 650	-	-	-	-	-	-	-	1 650
Mineral Product Use	910	-	-	-	-	-	-	-	910
b. Chemical Industry³	5 200	3.7	78	7.6	2 400	-	-	-	7 600
Ammonia Production	5 170	-	-	-	-	-	-	-	5 170
Nitric Acid Production	-	-	-	4.1	1 300	-	-	-	1 300
Adipic Acid Production	-	-	-	3.5	1 100	-	-	-	1 100
Petrochemical Production ⁴	-	3.7	78	0.03	10	-	-	-	88
c. Metal Production	14 900	-	-	-	-	-	3 010	2 550	20 500
Iron and Steel Production	10 400	-	-	-	-	-	-	-	10 400
Aluminum Production	4 580	-	-	-	-	-	3 010	70.4	7 660
SF ₆ Used in Magnesium Smelters and Casters	-	-	-	-	-	-	-	2 480	2 480
d. Production and Consumption of Halocarbons and SF₆⁵	-	-	-	-	-	4 400	6.7	230	4 700
e. Other & Undifferentiated Production	14 000	-	-	-	-	-	-	-	14 000
SOLVENT & OTHER PRODUCT USE	-	-	-	1.4	450	-	-	-	450
AGRICULTURE	-	1 100	24 000	100	30 000	-	-	-	57 000
a. Enteric Fermentation	-	990	21 000	-	-	-	-	-	21 000
b. Manure Management	-	150	3 100	13.5	4 190	-	-	-	7 300
c. Agriculture Soils	-	-	-	92	28 000	-	-	-	28 000
Direct Sources	-	-	-	48	15 000	-	-	-	15 000
Pasture, Range and Paddock Manure	-	-	-	11	3 300	-	-	-	3 300
Indirect Sources	-	-	-	30	10 000	-	-	-	10 000
d. Field Burning of Agricultural Residues	-	4	90	0.1	30	-	-	-	100
WASTE	470	950	20 000	3	800	-	-	-	21 000
a. Solid Waste Disposal on Land	-	930	20 000	-	-	-	-	-	20 000
b. Wastewater Handling	-	14	300	2	600	-	-	-	940
c. Waste Incineration	470	0.08	2	0.6	200	-	-	-	660
LAND USE, LAND-USE CHANGE AND FORESTRY	43 000	470	10 000	19	6 000	-	-	-	59 000
a. Forest Land	33 000	430	9 000	18	5 600	-	-	-	48 000
b. Cropland	-2 300	5	100	0.2	80	-	-	-	-2 100
c. Grassland	-	40	800	0.9	300	-	-	-	1 000
d. Wetlands	3 000	1	-	-	10	-	-	-	3 000
e. Settlements	9 000	6	100	0.2	70	-	-	-	9 000

Notes:

- National totals exclude all GHGs from the Land Use, Land-Use Change and Forestry sector.
 - Emissions from ethanol and biodiesel are included in the Transport categories using gasoline and diesel respectively.
 - Emissions from the Ammonia Production, Nitric Acid Production and Petrochemical Production subcategories are included in Other & Undifferentiated Production within the provincial/territorial tables.
 - The category Petrochemical Production includes CH₄ and N₂O emissions. CO₂ emissions are included in Other & Undifferentiated Production.
 - HFC emissions occurring as a by-product of HCFC production (HCFC-22 exclusively) only occurred in Canada from 1990–1992. HFC consumption began in 1995.
- Indicates no emissions
0.0 Indicates emissions truncated due to rounding

Table A12-13 2002 GHG Emission Summary for Canada

Greenhouse Gas Categories	Greenhouse Gases									TOTAL
	CO ₂	CH ₄	CH ₄	N ₂ O	N ₂ O	HFCs	PFCs	SF ₆		
	Global Warming Potential Unit	kt	kt	21 kt CO ₂ equivalent	kt	310 kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent	
TOTAL¹	567 000	4 600	96 000	150	46 000	3 900	3 000	3 200	720 000	
ENERGY	524 000	2 500	53 000	40	10 000	-	-	-	589 000	
a. Stationary Combustion Sources	339 000	200	5 000	9	3 000	-	-	-	346 000	
Electricity and Heat Generation	125 000	4.7	99	2	700	-	-	-	126 000	
Fossil Fuel Production and Refining	70 700	100	2 000	1	400	-	-	-	74 000	
Petroleum Refining	19 000	0.29	6.1	0.17	52	-	-	-	19 100	
Fossil Fuel Production	52 000	120	2 500	1.26	390	-	-	-	55 000	
Mining & Oil and Gas Extraction	13 400	0.26	5.6	0.3	90	-	-	-	13 500	
Manufacturing Industries	50 700	3	60	2	700	-	-	-	51 400	
Iron and Steel	5 790	0.3	5	0.2	60	-	-	-	5 860	
Non Ferrous Metals	3 460	0.07	2	0.05	20	-	-	-	3 480	
Chemical	9 220	0.18	3.8	0.2	50	-	-	-	9 280	
Pulp and Paper	10 600	2	40	1	400	-	-	-	11 100	
Cement	4 900	0.22	4.7	0.06	20	-	-	-	4 930	
Other Manufacturing	16 700	0.33	7	0.3	100	-	-	-	16 800	
Construction	1 250	0.02	0.46	0.03	9	-	-	-	1 260	
Commercial & Institutional	33 500	0.61	13	0.7	200	-	-	-	33 800	
Residential	41 700	100	2 000	2	600	-	-	-	44 600	
Agriculture & Forestry	2 130	0.04	0.75	0.06	18	-	-	-	2 150	
b. Transport²	170 000	30	700	30	9 000	-	-	-	180 000	
Civil Aviation (Domestic Aviation)	6 800	0.4	7	0.2	60	-	-	-	6 900	
Road Transportation	116 000	10	200	19	6 000	-	-	-	123 000	
Light-Duty Gasoline Vehicles	39 400	4.8	100	8.6	2 700	-	-	-	42 100	
Light-Duty Gasoline Trucks	36 000	4.1	86	8.8	2 700	-	-	-	38 900	
Heavy-Duty Gasoline Vehicles	5 980	0.44	9.2	0.37	120	-	-	-	6 100	
Motorcycles	206	0.1	2.1	0.0	1.2	-	-	-	210	
Light-Duty Diesel Vehicles	500	0.01	0.2	0.04	10	-	-	-	512	
Light-Duty Diesel Trucks	1 680	0.04	0.9	0.1	40	-	-	-	1 720	
Heavy-Duty Diesel Vehicles	31 800	1	30	2	500	-	-	-	32 300	
Propane & Natural Gas Vehicles	823	0.7	20	0.02	5	-	-	-	840	
Railways	5 300	0.3	6	2	700	-	-	-	6 000	
Navigation (Domestic Marine)	5 300	0.4	8	1	400	-	-	-	5 700	
Other Transportation	35 900	20	500	7	2 000	-	-	-	39 000	
Off-Road Gasoline	8 340	10	200	0.2	60	-	-	-	8 600	
Off-Road Diesel	17 000	0.9	20	7	2 000	-	-	-	19 000	
Pipelines	10 500	11	220	0.3	90	-	-	-	10 800	
c. Fugitive Sources	16 000	2 200	47 000	0.1	40	-	-	-	63 000	
Coal Mining	-	40	900	-	-	-	-	-	900	
Oil and Natural Gas	16 000	2 200	46 000	0.1	40	-	-	-	62 000	
Oil	180	260	5 400	0.1	30	-	-	-	5 600	
Natural Gas	52	860	18 000	-	-	-	-	-	18 000	
Venting	10 000	1 100	23 000	-	-	-	-	-	33 000	
Flaring	5 200	3.5	73	0.01	2	-	-	-	5 300	
INDUSTRIAL PROCESSES	42 200	4	83	8.12	2 520	3 900	3 000	3 200	54 900	
a. Mineral Products	9 400	-	-	-	-	-	-	-	9 400	
Cement Production	6 700	-	-	-	-	-	-	-	6 700	
Lime Production	1 670	-	-	-	-	-	-	-	1 670	
Mineral Product Use	940	-	-	-	-	-	-	-	940	
b. Chemical Industry³	5 200	4	83	8.1	2 500	-	-	-	7 800	
Ammonia Production	5 200	-	-	-	-	-	-	-	5 200	
Nitric Acid Production	-	-	-	4.1	1 300	-	-	-	1 300	
Adipic Acid Production	-	-	-	4	1 300	-	-	-	1 300	
Petrochemical Production ⁴	-	4	83	0.03	9.6	-	-	-	93	
c. Metal Production	14 900	-	-	-	-	-	2 970	3 020	20 900	
Iron and Steel Production	10 400	-	-	-	-	-	-	-	10 400	
Aluminum Production	4 420	-	-	-	-	-	2 970	80.2	7 470	
SF ₆ Used in Magnesium Smelters and Casters	-	-	-	-	-	-	-	2 940	2 940	
d. Production and Consumption of Halocarbons and SF₆⁵	-	-	-	-	-	3 900	20	150	4 100	
e. Other & Undifferentiated Production	13 000	-	-	-	-	-	-	-	13 000	
SOLVENT & OTHER PRODUCT USE	-	-	-	1.2	390	-	-	-	390	
AGRICULTURE	-	1 100	24 000	100	30 000	-	-	-	54 000	
a. Enteric Fermentation	-	990	21 000	-	-	-	-	-	21 000	
b. Manure Management	-	150	3 100	13.5	4 180	-	-	-	7 300	
c. Agriculture Soils	-	-	-	84	26 000	-	-	-	26 000	
Direct Sources	-	-	-	43	13 000	-	-	-	13 000	
Pasture, Range and Paddock Manure	-	-	-	10	3 200	-	-	-	3 200	
Indirect Sources	-	-	-	30	10 000	-	-	-	10 000	
d. Field Burning of Agricultural Residues	-	3	70	0.09	30	-	-	-	100	
WASTE	530	930	20 000	3	900	-	-	-	21 000	
a. Solid Waste Disposal on Land	-	920	19 000	-	-	-	-	-	19 000	
b. Wastewater Handling	-	14	290	2	600	-	-	-	940	
c. Waste Incineration	530	0.08	2	0.7	200	-	-	-	760	
LAND USE, LAND-USE CHANGE AND FORESTRY	100 000	660	14 000	27	8 500	-	-	-	120 000	
a. Forest Land	91 000	620	13 000	26	8 100	-	-	-	110 000	
b. Cropland	-1 500	6	100	0.3	80	-	-	-	-1 300	
c. Grassland	-	30	700	0.9	300	-	-	-	1 000	
d. Wetlands	3 000	-	-	-	-	-	-	-	3 000	
e. Settlements	9 000	6	100	0.2	60	-	-	-	9 000	

Notes:

- National totals exclude all GHGs from the Land Use, Land-use Change and Forestry sector.
 - Emissions from ethanol and biodiesel are included in the Transport categories using gasoline and diesel respectively.
 - Emissions from the Ammonia Production, Nitric Acid Production and Petrochemical Production subcategories are included in Other & Undifferentiated Production within the provincial/territorial tables.
 - The category Petrochemical Production includes CH₄ and N₂O emissions. CO₂ emissions are included in Other & Undifferentiated Production.
 - HFC emissions occurring as a by-product of HCFC production (HCFC-22 exclusively) only occurred in Canada from 1990-1992. HFC consumption began in 1995.
- Indicates no emissions
0.0 Indicates emissions truncated due to rounding

Table A12–14 2001 GHG Emission Summary for Canada

Greenhouse Gas Categories	Greenhouse Gases								
	CO ₂	CH ₄	CH ₄	N ₂ O	N ₂ O	HFCs	PFCs	SF ₆	TOTAL
	Global Warming Potential Unit	kt	kt	21 kt CO ₂ equivalent	kt	310 kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent
TOTAL¹	561 000	4 600	96 000	150	47 000	3 500	3 500	2 700	714 000
ENERGY	520 000	2 500	53 000	40	10 000	-	-	-	586 000
a. Stationary Combustion Sources	336 000	200	5 000	9	3 000	-	-	-	344 000
Electricity and Heat Generation	130 000	5	110	2	800	-	-	-	131 000
Fossil Fuel Production and Refining	68 300	100	2 000	1	400	-	-	-	71 000
Petroleum Refining	17 700	0.29	6.1	0.17	53	-	-	-	17 800
Fossil Fuel Production	51 000	120	2 400	1.22	378	-	-	-	53 000
Mining & Oil and Gas Extraction	11 800	0.23	4.9	0.3	90	-	-	-	11 900
Manufacturing Industries	51 000	3	60	2	600	-	-	-	51 700
Iron and Steel	4 950	0.2	5	0.2	60	-	-	-	5 010
Non Ferrous Metals	3 710	0.08	2	0.06	20	-	-	-	3 730
Chemical	9 720	0.2	4.2	0.2	50	-	-	-	9 780
Pulp and Paper	11 300	2	30	1	400	-	-	-	11 700
Cement	4 510	0.17	3.5	0.05	20	-	-	-	4 530
Other Manufacturing	16 900	0.34	7.1	0.3	100	-	-	-	17 000
Construction	1 010	0.02	0.37	0.03	8	-	-	-	1 020
Commercial & Institutional	32 100	0.63	13	0.7	200	-	-	-	32 300
Residential	39 700	100	2 000	2	500	-	-	-	42 300
Agriculture & Forestry	2 210	0.04	0.77	0.06	18	-	-	-	2 230
b. Transport²	168 000	30	700	30	9 000	-	-	-	179 000
Civil Aviation (Domestic Aviation)	6 990	0.4	8	0.2	70	-	-	-	7 100
Road Transportation	115 000	10	200	19	5 900	-	-	-	121 000
Light-Duty Gasoline Vehicles	39 100	4.9	100	8.6	2 700	-	-	-	41 900
Light-Duty Gasoline Trucks	34 500	3.9	83	8.4	2 600	-	-	-	37 200
Heavy-Duty Gasoline Vehicles	6 110	0.47	10	0.36	110	-	-	-	6 230
Motorcycles	182	0.1	2	0.0	1.1	-	-	-	185
Light-Duty Diesel Vehicles	473	0.01	0.2	0.04	10	-	-	-	485
Light-Duty Diesel Trucks	1 610	0.04	0.9	0.1	40	-	-	-	1 650
Heavy-Duty Diesel Vehicles	31 500	1	30	1	500	-	-	-	32 000
Propane & Natural Gas Vehicles	1 110	0.9	20	0.02	7	-	-	-	1 100
Railways	5 760	0.3	7	2	700	-	-	-	6 500
Navigation (Domestic Marine)	5 280	0.4	8	1	400	-	-	-	5 700
Other Transportation	35 800	20	400	8	2 000	-	-	-	39 000
Off-Road Gasoline	8 320	10	200	0.2	60	-	-	-	8 600
Off-Road Diesel	17 500	1	20	7	2 000	-	-	-	20 000
Pipelines	9 950	10	210	0.3	80	-	-	-	10 200
c. Fugitive Sources	16 000	2 300	48 000	0.1	40	-	-	-	63 000
Coal Mining	-	50	1 000	-	-	-	-	-	1 000
Oil and Natural Gas	16 000	2 200	47 000	0.1	40	-	-	-	62 000
Oil	170	270	5 600	0.1	30	-	-	-	5 800
Natural Gas	51	850	18 000	-	-	-	-	-	18 000
Venting	10 000	1 100	23 000	-	-	-	-	-	34 000
Flaring	4 900	3.4	72	0.01	2	-	-	-	5 000
INDUSTRIAL PROCESSES	40 300	4.1	87	6.76	2 100	3 500	3 500	2 700	52 200
a. Mineral Products	9 200	-	-	-	-	-	-	-	9 200
Cement Production	6 500	-	-	-	-	-	-	-	6 500
Lime Production	1 640	-	-	-	-	-	-	-	1 640
Mineral Product Use	970	-	-	-	-	-	-	-	970
b. Chemical Industry³	5 200	4.1	87	6.8	2 100	-	-	-	7 400
Ammonia Production	5 170	-	-	-	-	-	-	-	5 170
Nitric Acid Production	-	-	-	4.1	1 300	-	-	-	1 300
Adipic Acid Production	-	-	-	2.6	800	-	-	-	800
Petrochemical Production ⁴	-	4.1	87	0.03	8.5	-	-	-	95
c. Metal Production	14 800	-	-	-	-	-	3 470	2 400	20 700
Iron and Steel Production	10 600	-	-	-	-	-	-	-	10 600
Aluminum Production	4 200	-	-	-	-	-	3 470	44	7 720
SF ₆ Used in Magnesium Smelters and Casters	-	-	-	-	-	-	-	2 360	2 360
d. Production and Consumption of Halocarbons and SF₆⁵	-	-	-	-	-	3 500	30	280	3 800
e. Other & Undifferentiated Production	11 000	-	-	-	-	-	-	-	11 000
SOLVENT & OTHER PRODUCT USE	-	-	-	1.4	420	-	-	-	420
AGRICULTURE	-	1 100	24 000	100	30 000	-	-	-	55 000
a. Enteric Fermentation	-	980	21 000	-	-	-	-	-	21 000
b. Manure Management	-	150	3 100	13.4	4 140	-	-	-	7 200
c. Agriculture Soils	-	-	-	88	27 000	-	-	-	27 000
Direct Sources	-	-	-	45	14 000	-	-	-	14 000
Pasture, Range and Paddock Manure	-	-	-	10	3 200	-	-	-	3 200
Indirect Sources	-	-	-	30	10 000	-	-	-	10 000
d. Field Burning of Agricultural Residues	-	3	70	0.09	30	-	-	-	100
WASTE	550	910	19 000	3	900	-	-	-	21 000
a. Solid Waste Disposal on Land	-	900	19 000	-	-	-	-	-	19 000
b. Wastewater Handling	-	14	290	2	600	-	-	-	930
c. Waste Incineration	550	0.08	2	0.7	200	-	-	-	780
LAND USE, LAND-USE CHANGE AND FORESTRY	-50 000	180	3 800	7.1	2 200	-	-	-	-44 000
a. Forest Land	-61 000	140	2 900	5.8	1 800	-	-	-	-56 000
b. Cropland	-240	7	100	0.3	100	-	-	-	-6.8
c. Grassland	-	30	600	0.8	200	-	-	-	900
d. Wetlands	3 000	-	-	-	-	-	-	-	3 000
e. Settlements	9 000	5	100	0.2	60	-	-	-	9 000

Notes:

- National totals exclude all GHGs from the Land Use, Land-use Change and Forestry sector.
- Emissions from ethanol and biodiesel are included in the Transport categories using gasoline and diesel respectively.
- Emissions from the Ammonia Production, Nitric Acid Production and Petrochemical Production subcategories are included in Other & Undifferentiated Production within the provincial/territorial tables.
- The category Petrochemical Production includes CH₄ and N₂O emissions. CO₂ emissions are included in Other & Undifferentiated Production.
- HFC emissions occurring as a by-product of HCFC production (HCFC-22 exclusively) only occurred in Canada from 1990–1992. HFC consumption began in 1995.
- Indicates no emissions
- 0.0 Indicates emissions truncated due to rounding

Table A12-15 2000 GHG Emission Summary for Canada

Greenhouse Gas Categories	Greenhouse Gases								
	CO ₂	CH ₄	CH ₄	N ₂ O	N ₂ O	HFCs	PFCS	SF ₆	TOTAL
	Global Warming Potential								
Unit	kt	kt	kt CO ₂ equivalent	kt	kt CO ₂ equivalent				
TOTAL¹	568 000	4 500	95 000	160	49 000	2 900	4 300	3 100	721 000
ENERGY	526 000	2 500	52 000	40	10 000	-	-	-	591 000
a. Stationary Combustion Sources	340 000	200	5 000	9	3 000	-	-	-	347 000
Electricity and Heat Generation	129 000	4.8	100	2	700	-	-	-	130 000
Fossil Fuel Production and Refining	65 000	100	2 000	1	400	-	-	-	68 000
Petroleum Refining	16 800	0.29	6.1	0.19	59	-	-	-	16 900
Fossil Fuel Production	48 000	110	2 400	1.18	365	-	-	-	51 000
Mining & Oil and Gas Extraction	11 900	0.24	5	0.3	90	-	-	-	12 000
Manufacturing Industries	55 100	3	60	2	700	-	-	-	55 800
Iron and Steel	6 140	0.3	6	0.2	70	-	-	-	6 210
Non Ferrous Metals	3 510	0.07	2	0.05	20	-	-	-	3 530
Chemical	10 700	0.22	4.5	0.2	60	-	-	-	10 800
Pulp and Paper	12 200	2	40	1	400	-	-	-	12 600
Cement	4 560	0.17	3.6	0.05	20	-	-	-	4 580
Other Manufacturing	18 000	0.36	7.6	0.3	100	-	-	-	18 100
Construction	1 070	0.02	0.39	0.03	8	-	-	-	1 080
Commercial & Institutional	32 600	0.61	13	0.7	200	-	-	-	32 900
Residential	42 400	100	2 000	2	600	-	-	-	45 100
Agriculture & Forestry	2 530	0.04	0.86	0.06	18	-	-	-	2 550
b. Transport²	170 000	40	700	30	10 000	-	-	-	180 000
Civil Aviation (Domestic Aviation)	7 570	0.4	8	0.2	70	-	-	-	7 600
Road Transportation	112 000	10	300	18	5 700	-	-	-	118 000
Light-Duty Gasoline Vehicles	39 300	5.2	110	8.5	2 600	-	-	-	42 000
Light-Duty Gasoline Trucks	33 800	4	84	8.1	2 500	-	-	-	36 400
Heavy-Duty Gasoline Vehicles	5 370	0.5	10	0.27	85	-	-	-	5 470
Motorcycles	159	0.09	2	0.0	0.94	-	-	-	162
Light-Duty Diesel Vehicles	455	0.01	0.2	0.04	10	-	-	-	466
Light-Duty Diesel Trucks	1 620	0.04	0.9	0.1	40	-	-	-	1 660
Heavy-Duty Diesel Vehicles	30 400	1	30	1	400	-	-	-	30 800
Propane & Natural Gas Vehicles	1 070	1	20	0.02	7	-	-	-	1 100
Railways	5 820	0.3	7	2	700	-	-	-	6 600
Navigation (Domestic Marine)	4 840	0.3	7	1	400	-	-	-	5 200
Other Transportation	39 600	20	500	9	3 000	-	-	-	43 000
Off-Road Gasoline	8 460	10	200	0.2	60	-	-	-	8 700
Off-Road Diesel	20 200	1	20	8	3 000	-	-	-	23 000
Pipelines	10 900	11	230	0.3	90	-	-	-	11 200
c. Fugitive Sources	16 000	2 200	47 000	0.1	40	-	-	-	63 000
Coal Mining	-	50	1 000	-	-	-	-	-	1 000
Oil and Natural Gas	16 000	2 200	46 000	0.1	40	-	-	-	62 000
Oil	130	250	5 300	0.1	30	-	-	-	5 400
Natural Gas	51	840	18 000	-	-	-	-	-	18 000
Venting	10 000	1 100	23 000	-	-	-	-	-	33 000
Flaring	5 300	3.8	80	0.0	0.7	-	-	-	5 400
INDUSTRIAL PROCESSES	41 300	4.2	89	6.9	2 140	2 900	4 300	3 100	53 800
a. Mineral Products	9 800	-	-	-	-	-	-	-	9 800
Cement Production	6 700	-	-	-	-	-	-	-	6 700
Lime Production	1 870	-	-	-	-	-	-	-	1 870
Mineral Product Use	1 200	-	-	-	-	-	-	-	1 200
b. Chemical Industry³	5 700	4.2	89	6.9	2 100	-	-	-	8 000
Ammonia Production	5 730	-	-	-	-	-	-	-	5 730
Nitric Acid Production	-	-	-	4	1 200	-	-	-	1 200
Adipic Acid Production	-	-	-	2.9	900	-	-	-	900
Petrochemical Production ⁴	-	4.2	89	0.03	8.2	-	-	-	97
c. Metal Production	15 400	-	-	-	-	-	4 280	2 830	22 500
Iron and Steel Production	11 500	-	-	-	-	-	-	-	11 500
Aluminum Production	3 900	-	-	-	-	-	4 280	47.3	8 230
SF ₆ Used in Magnesium Smelters and Casters	-	-	-	-	-	-	-	2 780	2 780
d. Production and Consumption of Halocarbons and SF₆⁵	-	-	-	-	-	2 900	30	220	3 200
e. Other & Undifferentiated Production	10 000	-	-	-	-	-	-	-	10 000
SOLVENT & OTHER PRODUCT USE	-	-	-	1.5	450	-	-	-	450
AGRICULTURE	-	1 100	23 000	100	30 000	-	-	-	56 000
a. Enteric Fermentation	-	950	20 000	-	-	-	-	-	20 000
b. Manure Management	-	140	2 900	12.9	4 010	-	-	-	7 000
c. Agriculture Soils	-	-	-	93	29 000	-	-	-	29 000
Direct Sources	-	-	-	49	15 000	-	-	-	15 000
Pasture, Range and Paddock Manure	-	-	-	9.9	3 100	-	-	-	3 100
Indirect Sources	-	-	-	30	10 000	-	-	-	10 000
d. Field Burning of Agricultural Residues	-	4	90	0.1	30	-	-	-	100
WASTE	530	920	19 000	3	800	-	-	-	21 000
a. Solid Waste Disposal on Land	-	900	19 000	-	-	-	-	-	19 000
b. Wastewater Handling	-	14	290	2	600	-	-	-	920
c. Waste Incineration	530	0.07	1	0.7	200	-	-	-	750
LAND USE, LAND-USE CHANGE AND FORESTRY	-55 000	100	2 200	3.8	1 200	-	-	-	-52 000
a. Forest Land	-67 000	61	1 300	2.6	800	-	-	-	-65 000
b. Cropland	87	5	100	0.3	80	-	-	-	280
c. Grassland	-	30	700	0.8	300	-	-	-	900
d. Wetlands	3 000	-	-	-	-	-	-	-	3 000
e. Settlements	9 000	5	100	0.2	60	-	-	-	9 000

Notes:

- National totals exclude all GHGs from the Land Use, Land-use Change and Forestry sector.
 - Emissions from ethanol and biodiesel are included in the Transport categories using gasoline and diesel respectively.
 - Emissions from the Ammonia Production, Nitric Acid Production and Petrochemical Production subcategories are included in Other & Undifferentiated Production within the provincial/territorial tables.
 - The category Petrochemical Production includes CH₄ and N₂O emissions. CO₂ emissions are included in Other & Undifferentiated Production.
 - HFC emissions occurring as a by-product of HCFC production (HCFC-22 exclusively) only occurred in Canada from 1990-1992. HFC consumption began in 1995.
- Indicates no emissions
0.0 Indicates emissions truncated due to rounding

Table A12–16 1999 GHG Emission Summary for Canada

Greenhouse Gas Categories	Greenhouse Gases								
	CO ₂	CH ₄	CH ₄	N ₂ O	N ₂ O	HFCs	PFCs	SF ₆	TOTAL
	Global Warming Potential Unit								
	kt	kt	kt CO ₂ equivalent	kt	kt CO ₂ equivalent				
TOTAL¹	546 000	4 400	92 000	160	49 000	2 400	4 600	2 500	696 000
ENERGY	504 000	2 400	50 000	40	10 000	-	-	-	566 000
a. Stationary Combustion Sources	319 000	200	5 000	8	3 000	-	-	-	326 000
Electricity and Heat Generation	118 000	3.9	82	2	700	-	-	-	119 000
Fossil Fuel Production and Refining	64 300	100	2 000	1	400	-	-	-	67 000
Petroleum Refining	16 900	0.27	5.7	0.17	52	-	-	-	17 000
Fossil Fuel Production	47 000	110	2 300	1.15	356	-	-	-	50 000
Mining & Oil and Gas Extraction	8 800	0.17	3.7	0.2	60	-	-	-	8 860
Manufacturing Industries	54 800	3	60	2	700	-	-	-	55 500
Iron and Steel	6 250	0.3	6	0.2	70	-	-	-	6 330
Non Ferrous Metals	3 620	0.07	1	0.05	20	-	-	-	3 640
Chemical	11 000	0.23	4.8	0.2	60	-	-	-	11 100
Pulp and Paper	12 100	2	40	1	400	-	-	-	12 600
Cement	4 390	0.16	3.3	0.05	20	-	-	-	4 410
Other Manufacturing	17 400	0.35	7.4	0.3	100	-	-	-	17 500
Construction	1 160	0.02	0.42	0.03	10	-	-	-	1 170
Commercial & Institutional	28 700	0.53	11	0.6	200	-	-	-	28 900
Residential	40 100	100	2 000	2	500	-	-	-	42 800
Agriculture & Forestry	2 640	0.04	0.84	0.06	18	-	-	-	2 660
b. Transport²	169 000	40	800	30	9 000	-	-	-	179 000
Civil Aviation (Domestic Aviation)	7 660	0.4	8	0.2	70	-	-	-	7 700
Road Transportation	111 000	10	300	18	5 700	-	-	-	117 000
Light-Duty Gasoline Vehicles	39 600	5.3	110	8.7	2 700	-	-	-	42 400
Light-Duty Gasoline Trucks	33 000	3.9	82	7.9	2 500	-	-	-	35 600
Heavy-Duty Gasoline Vehicles	5 290	0.53	11	0.25	76	-	-	-	5 380
Motorcycles	142	0.09	1.9	0.0	0.86	-	-	-	145
Light-Duty Diesel Vehicles	435	0.01	0.2	0.03	10	-	-	-	445
Light-Duty Diesel Trucks	1 520	0.04	0.8	0.1	40	-	-	-	1 560
Heavy-Duty Diesel Vehicles	29 600	1	30	1	400	-	-	-	30 000
Propane & Natural Gas Vehicles	1 460	1	20	0.03	9	-	-	-	1 500
Railways	5 640	0.3	7	2	700	-	-	-	6 400
Navigation (Domestic Marine)	4 670	0.3	7	1	400	-	-	-	5 000
Other Transportation	39 800	20	500	8	3 000	-	-	-	43 000
Off-Road Gasoline	9 050	10	200	0.2	60	-	-	-	9 300
Off-Road Diesel	18 600	1	20	8	2 000	-	-	-	21 000
Pipelines	12 200	12	260	0.3	100	-	-	-	12 500
c. Fugitive Sources	16 000	2 100	45 000	0.1	40	-	-	-	61 000
Coal Mining	-	50	1 000	-	-	-	-	-	1 000
Oil and Natural Gas	16 000	2 100	44 000	0.1	40	-	-	-	60 000
Oil	130	250	5 200	0.1	30	-	-	-	5 400
Natural Gas	47	810	17 000	-	-	-	-	-	17 000
Venting	11 000	1 000	21 000	-	-	-	-	-	32 000
Flaring	5 300	3.5	74	0.0	0.7	-	-	-	5 400
INDUSTRIAL PROCESSES	41 600	4.1	85	9.44	2 930	2 400	4 600	2 500	54 200
a. Mineral Products	9 500	-	-	-	-	-	-	-	9 500
Cement Production	6 600	-	-	-	-	-	-	-	6 600
Lime Production	1 920	-	-	-	-	-	-	-	1 920
Mineral Product Use	960	-	-	-	-	-	-	-	960
b. Chemical Industry³	5 900	4.1	85	9.4	2 900	-	-	-	8 900
Ammonia Production	5 860	-	-	-	-	-	-	-	5 860
Nitric Acid Production	-	-	-	3.8	1 200	-	-	-	1 200
Adipic Acid Production	-	-	-	5.6	1 700	-	-	-	1 700
Petrochemical Production ⁴	-	4.1	85	0.03	9.5	-	-	-	95
c. Metal Production	15 400	-	-	-	-	-	4 620	2 320	22 400
Iron and Steel Production	11 500	-	-	-	-	-	-	-	11 500
Aluminum Production	3 950	-	-	-	-	-	4 620	53.5	8 630
SF ₆ Used in Magnesium Smelters and Casters	-	-	-	-	-	-	-	2 270	2 270
d. Production and Consumption of Halocarbons and SF₆⁵	-	-	-	-	-	2 400	22	210	2 600
e. Other & Undifferentiated Production	11 000	-	-	-	-	-	-	-	11 000
SOLVENT & OTHER PRODUCT USE	-	-	-	1.3	410	-	-	-	410
AGRICULTURE	-	1 100	22 000	100	30 000	-	-	-	55 000
a. Enteric Fermentation	-	930	19 000	-	-	-	-	-	19 000
b. Manure Management	-	140	2 900	12.5	3 870	-	-	-	6 700
c. Agriculture Soils	-	-	-	93	29 000	-	-	-	29 000
Direct Sources	-	-	-	50	16 000	-	-	-	16 000
Pasture, Range and Paddock Manure	-	-	-	9.5	2 900	-	-	-	2 900
Indirect Sources	-	-	-	30	10 000	-	-	-	10 000
d. Field Burning of Agricultural Residues	-	5	100	0.1	40	-	-	-	100
WASTE	480	920	19 000	3	800	-	-	-	21 000
a. Solid Waste Disposal on Land	-	900	19 000	-	-	-	-	-	19 000
b. Wastewater Handling	-	15	300	2	600	-	-	-	920
c. Waste Incineration	480	0.06	1	0.6	200	-	-	-	670
LAND USE, LAND-USE CHANGE AND FORESTRY	-1 000	310	6 600	13	4 000	-	-	-	9 600
a. Forest Land	-14 000	280	5 800	12	3 600	-	-	-	-5 000
b. Cropland	1 100	6	100	0.3	80	-	-	-	1 300
c. Grassland	-	20	500	0.6	200	-	-	-	700
d. Wetlands	4 000	-	-	0.1	-	-	-	-	4 000
e. Settlements	9 000	5	100	0.2	60	-	-	-	9 000

Notes:

- National totals exclude all GHGs from the Land Use, Land-use Change and Forestry sector.
 - Emissions from ethanol and biodiesel are included in the Transport categories using gasoline and diesel respectively.
 - Emissions from the Ammonia Production, Nitric Acid Production and Petrochemical Production subcategories are included in Other & Undifferentiated Production within the provincial/territorial tables.
 - The category Petrochemical Production includes CH₄ and N₂O emissions. CO₂ emissions are included in Other & Undifferentiated Production.
 - HFC emissions occurring as a by-product of HCFC production (HCFC-22 exclusively) only occurred in Canada from 1990–1992. HFC consumption began in 1995.
- Indicates no emissions
0.0 Indicates emissions truncated due to rounding

Table A12-17 1998 GHG Emission Summary for Canada

Greenhouse Gas Categories	Greenhouse Gases								
	CO ₂	CH ₄	CH ₄	N ₂ O	N ₂ O	HFCs	PFCs	SF ₆	TOTAL
	Global Warming Potential Unit	kt	kt	21 kt CO ₂ equivalent	kt	310 kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent
TOTAL¹	530 000	4 400	92 000	160	51 000	1 900	5 600	2 500	683 000
ENERGY	489 000	2 400	51 000	40	10 000	-	-	-	551 000
a. Stationary Combustion Sources	307 000	200	4 000	8	2 000	-	-	-	313 000
Electricity and Heat Generation	121 000	3.9	82	2	700	-	-	-	121 000
Fossil Fuel Production and Refining	53 900	90	2 000	1	300	-	-	-	56 000
Petroleum Refining	17 900	0.3	6.2	0.17	54	-	-	-	18 000
Fossil Fuel Production	36 000	86	1 800	0.93	289	-	-	-	38 000
Mining & Oil and Gas Extraction	9 120	0.18	3.9	0.2	60	-	-	-	9 180
Manufacturing Industries	53 800	3	60	2	600	-	-	-	54 500
Iron and Steel	6 150	0.3	6	0.2	70	-	-	-	6 230
Non Ferrous Metals	3 810	0.08	2	0.06	20	-	-	-	3 830
Chemical	10 700	0.22	4.6	0.2	60	-	-	-	10 800
Pulp and Paper	11 800	2	30	1	400	-	-	-	12 200
Cement	4 120	0.15	3.2	0.05	20	-	-	-	4 140
Other Manufacturing	17 200	0.35	7.3	0.3	100	-	-	-	17 300
Construction	1 100	0.02	0.4	0.03	10	-	-	-	1 110
Commercial & Institutional	27 200	0.5	11	0.6	200	-	-	-	27 300
Residential	38 300	100	2 000	2	500	-	-	-	41 000
Agriculture & Forestry	2 560	0.04	0.81	0.06	17	-	-	-	2 580
b. Transport²	165 000	40	800	30	9 000	-	-	-	175 000
Civil Aviation (Domestic Aviation)	7 300	0.4	8	0.2	70	-	-	-	7 400
Road Transportation	108 000	10	300	18	5 500	-	-	-	114 000
Light-Duty Gasoline Vehicles	38 700	5.4	110	8.6	2 700	-	-	-	41 400
Light-Duty Gasoline Trucks	31 000	3.7	77	7.4	2 300	-	-	-	33 400
Heavy-Duty Gasoline Vehicles	5 760	0.64	14	0.23	72	-	-	-	5 840
Motorcycles	146	0.11	2.2	0.0	0.89	-	-	-	149
Light-Duty Diesel Vehicles	416	0.01	0.2	0.03	10	-	-	-	427
Light-Duty Diesel Trucks	1 530	0.04	0.8	0.1	40	-	-	-	1 560
Heavy-Duty Diesel Vehicles	29 000	1	30	1	400	-	-	-	29 400
Propane & Natural Gas Vehicles	1 730	1	30	0.03	10	-	-	-	1 800
Railways	5 320	0.3	6	2	700	-	-	-	6 000
Navigation (Domestic Marine)	4 840	0.3	7	1	300	-	-	-	5 200
Other Transportation	39 100	20	500	8	2 000	-	-	-	42 000
Off-Road Gasoline	9 640	10	200	0.2	70	-	-	-	9 900
Off-Road Diesel	17 400	1	20	7	2 000	-	-	-	20 000
Pipelines	12 100	12	260	0.3	100	-	-	-	12 400
c. Fugitive Sources	18 000	2 200	46 000	0.1	40	-	-	-	63 000
Coal Mining	-	60	1 000	-	-	-	-	-	1 000
Oil and Natural Gas	18 000	2 100	44 000	0.1	40	-	-	-	62 000
Oil	120	250	5 300	0.1	30	-	-	-	5 400
Natural Gas	52	830	17 000	-	-	-	-	-	17 000
Venting	10 000	1 000	22 000	-	-	-	-	-	32 000
Flaring	7 000	4.6	96	0.0	1	-	-	-	7 100
INDUSTRIAL PROCESSES	40 500	3.6	76	19.7	6 110	1 900	5 600	2 500	56 700
a. Mineral Products	9 300	-	-	-	-	-	-	-	9 300
Cement Production	6 400	-	-	-	-	-	-	-	6 400
Lime Production	1 850	-	-	-	-	-	-	-	1 850
Mineral Product Use	1 100	-	-	-	-	-	-	-	1 100
b. Chemical Industry³	6 100	3.6	76	20	6 100	-	-	-	12 000
Ammonia Production	6 060	-	-	-	-	-	-	-	6 060
Nitric Acid Production	-	-	-	3.3	1 000	-	-	-	1 000
Adipic Acid Production	-	-	-	16	5 100	-	-	-	5 100
Petrochemical Production ⁴	-	3.6	76	0.03	8.8	-	-	-	85
c. Metal Production	15 200	-	-	-	-	-	5 580	2 260	23 000
Iron and Steel Production	11 200	-	-	-	-	-	-	-	11 200
Aluminum Production	3 980	-	-	-	-	-	5 580	59.1	9 620
SF ₆ Used in Magnesium Smelters and Casters	-	-	-	-	-	-	-	2 210	2 210
d. Production and Consumption of Halocarbons and SF₆⁵	-	-	-	-	-	1 900	18	210	2 200
e. Other & Undifferentiated Production	9 900	-	-	-	-	-	-	-	9 900
SOLVENT & OTHER PRODUCT USE	-	-	-	1.3	400	-	-	-	400
AGRICULTURE	-	1 100	22 000	100	30 000	-	-	-	55 000
a. Enteric Fermentation	-	930	19 000	-	-	-	-	-	19 000
b. Manure Management	-	140	2 900	12.4	3 840	-	-	-	6 700
c. Agriculture Soils	-	-	-	92	28 000	-	-	-	28 000
Direct Sources	-	-	-	49	15 000	-	-	-	15 000
Pasture, Range and Paddock Manure	-	-	-	9.4	2 900	-	-	-	2 900
Indirect Sources	-	-	-	30	10 000	-	-	-	10 000
d. Field Burning of Agricultural Residues	-	6	100	0.2	50	-	-	-	200
WASTE	530	900	19 000	3	800	-	-	-	20 000
a. Solid Waste Disposal on Land	-	890	19 000	-	-	-	-	-	19 000
b. Wastewater Handling	-	15	320	2	600	-	-	-	920
c. Waste Incineration	530	0.06	1	0.7	200	-	-	-	740
LAND USE, LAND-USE CHANGE AND FORESTRY	110 000	790	17 000	33	10 000	-	-	-	130 000
a. Forest Land	93 000	750	16 000	32	9 800	-	-	-	120 000
b. Cropland	1 900	6	100	0.3	90	-	-	-	2 200
c. Grassland	-	20	400	0.5	200	-	-	-	600
d. Wetlands	3 000	1	-	-	10	-	-	-	3 000
e. Settlements	8 000	5	100	0.2	60	-	-	-	9 000

Notes:

- National totals exclude all GHGs from the Land Use, Land-use Change and Forestry sector.
 - Emissions from ethanol and biodiesel are included in the Transport categories using gasoline and diesel respectively.
 - Emissions from the Ammonia Production, Nitric Acid Production and Petrochemical Production subcategories are included in Other & Undifferentiated Production within the provincial/territorial tables.
 - The category Petrochemical Production includes CH₄ and N₂O emissions. CO₂ emissions are included in Other & Undifferentiated Production.
 - HFC emissions occurring as a by-product of HCFC production (HCFC-22 exclusively) only occurred in Canada from 1990-1992. HFC consumption began in 1995.
- Indicates no emissions
0.0 Indicates emissions truncated due to rounding

Table A12–18 1997 GHG Emission Summary for Canada

Greenhouse Gas Categories	Greenhouse Gases								
	CO ₂	CH ₄	CH ₄	N ₂ O	N ₂ O	HFCs	PFCs	SF ₆	TOTAL
	Global Warming Potential Unit	kt	kt	21 kt CO ₂ equivalent	kt	310 kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent
TOTAL¹	521 000	4 300	91 000	180	55 000	1 400	5 500	1 900	676 000
ENERGY	480 000	2 400	50 000	40	10 000	-	-	-	541 000
a. Stationary Combustion Sources	303 000	200	4 000	8	2 000	-	-	-	309 000
Electricity and Heat Generation	108 000	3.2	67	2	600	-	-	-	109 000
Fossil Fuel Production and Refining	50 600	70	2 000	1	300	-	-	-	52 000
Petroleum Refining	18 300	0.31	6.5	0.18	55	-	-	-	18 400
Fossil Fuel Production	32 000	73	1 500	0.79	244	-	-	-	34 000
Mining & Oil and Gas Extraction	9 780	0.2	4.2	0.2	70	-	-	-	9 860
Manufacturing Industries	56 700	3	50	2	600	-	-	-	57 400
Iron and Steel	6 090	0.3	6	0.2	60	-	-	-	6 160
Non Ferrous Metals	3 820	0.08	2	0.06	20	-	-	-	3 840
Chemical	10 100	0.21	4.4	0.2	50	-	-	-	10 200
Pulp and Paper	12 800	2	30	1	400	-	-	-	13 200
Cement	3 970	0.12	2.5	0.05	10	-	-	-	3 990
Other Manufacturing	19 900	0.4	8.4	0.4	100	-	-	-	20 100
Construction	1 240	0.02	0.43	0.03	10	-	-	-	1 250
Commercial & Institutional	29 700	0.54	11	0.6	200	-	-	-	29 900
Residential	43 500	90	2 000	2	500	-	-	-	46 000
Agriculture & Forestry	2 880	0.04	0.92	0.07	21	-	-	-	2 900
b. Transport²	162 000	40	800	30	9 000	-	-	-	171 000
Civil Aviation (Domestic Aviation)	7 020	0.3	7	0.2	70	-	-	-	7 100
Road Transportation	105 000	10	300	17	5 300	-	-	-	111 000
Light-Duty Gasoline Vehicles	39 900	5.7	120	8.8	2 700	-	-	-	42 800
Light-Duty Gasoline Trucks	28 800	3.4	72	6.9	2 100	-	-	-	31 000
Heavy-Duty Gasoline Vehicles	5 660	0.71	15	0.19	58	-	-	-	5 740
Motorcycles	124	0.1	2.1	0.0	0.77	-	-	-	127
Light-Duty Diesel Vehicles	402	0.01	0.2	0.03	10	-	-	-	412
Light-Duty Diesel Trucks	1 390	0.04	0.8	0.1	30	-	-	-	1 420
Heavy-Duty Diesel Vehicles	27 300	1	30	1	300	-	-	-	27 600
Propane & Natural Gas Vehicles	1 800	1	30	0.04	10	-	-	-	1 800
Railways	5 530	0.3	6	2	700	-	-	-	6 200
Navigation (Domestic Marine)	4 210	0.3	6	1	300	-	-	-	4 500
Other Transportation	39 400	20	500	8	3 000	-	-	-	42 000
Off-Road Gasoline	8 530	10	200	0.2	60	-	-	-	8 800
Off-Road Diesel	18 700	1	20	8	2 000	-	-	-	21 000
Pipelines	12 100	12	260	0.3	100	-	-	-	12 500
c. Fugitive Sources	16 000	2 100	45 000	0.1	40	-	-	-	61 000
Coal Mining	-	70	2 000	-	-	-	-	-	2 000
Oil and Natural Gas	16 000	2 100	44 000	0.1	40	-	-	-	60 000
Oil	120	260	5 400	0.1	30	-	-	-	5 600
Natural Gas	41	760	16 000	-	-	-	-	-	16 000
Venting	10 000	1 100	22 000	-	-	-	-	-	33 000
Flaring	5 500	3.6	75	0.0	0.7	-	-	-	5 600
INDUSTRIAL PROCESSES	40 400	3.8	80	35.3	11 000	1 400	5 500	1 900	60 300
a. Mineral Products	9 200	-	-	-	-	-	-	-	9 200
Cement Production	6 200	-	-	-	-	-	-	-	6 200
Lime Production	1 860	-	-	-	-	-	-	-	1 860
Mineral Product Use	1 100	-	-	-	-	-	-	-	1 100
b. Chemical Industry³	5 400	3.8	80	35	11 000	-	-	-	16 000
Ammonia Production	5 440	-	-	-	-	-	-	-	5 440
Nitric Acid Production	-	-	-	3.4	1 100	-	-	-	1 100
Adipic Acid Production	-	-	-	32	9 900	-	-	-	9 900
Petrochemical Production ⁴	-	3.8	80	0.03	8.9	-	-	-	89
c. Metal Production	14 900	-	-	-	-	-	5 490	1 730	22 100
Iron and Steel Production	11 000	-	-	-	-	-	-	-	11 000
Aluminum Production	3 930	-	-	-	-	-	5 490	59.1	9 480
SF ₆ Used in Magnesium Smelters and Casters	-	-	-	-	-	-	-	1 670	1 670
d. Production and Consumption of Halocarbons and SF₆⁵	-	-	-	-	-	1 400	18	190	1 600
e. Other & Undifferentiated Production	11 000	-	-	-	-	-	-	-	11 000
SOLVENT & OTHER PRODUCT USE	-	-	-	0.74	230	-	-	-	230
AGRICULTURE	-	1 100	22 000	100	30 000	-	-	-	54 000
a. Enteric Fermentation	-	920	19 000	-	-	-	-	-	19 000
b. Manure Management	-	130	2 800	12.2	3 780	-	-	-	6 600
c. Agriculture Soils	-	-	-	90	28 000	-	-	-	28 000
Direct Sources	-	-	-	49	15 000	-	-	-	15 000
Pasture, Range and Paddock Manure	-	-	-	9.2	2 900	-	-	-	2 900
Indirect Sources	-	-	-	30	10 000	-	-	-	10 000
d. Field Burning of Agricultural Residues	-	6	100	0.1	40	-	-	-	200
WASTE	500	890	19 000	3	800	-	-	-	20 000
a. Solid Waste Disposal on Land	-	880	18 000	-	-	-	-	-	18 000
b. Wastewater Handling	-	16	330	2	600	-	-	-	920
c. Waste Incineration	500	0.05	1	0.6	200	-	-	-	690
LAND USE, LAND-USE CHANGE AND FORESTRY	-72 000	110	2 300	4.2	1 300	-	-	-	-68 000
a. Forest Land	-86 000	79	1 700	3.3	1 000	-	-	-	-84 000
b. Cropland	3 000	6	100	0.3	90	-	-	-	3 200
c. Grassland	-	20	400	0.4	100	-	-	-	500
d. Wetlands	3 000	-	-	-	-	-	-	-	3 000
e. Settlements	8 000	5	100	0.2	50	-	-	-	8 000

Notes:

- National totals exclude all GHGs from the Land Use, Land-use Change and Forestry sector.
 - Emissions from ethanol and biodiesel are included in the Transport categories using gasoline and diesel respectively.
 - Emissions from the Ammonia Production, Nitric Acid Production and Petrochemical Production subcategories are included in Other & Undifferentiated Production within the provincial/territorial tables.
 - The category Petrochemical Production includes CH₄ and N₂O emissions. CO₂ emissions are included in Other & Undifferentiated Production.
 - HFC emissions occurring as a by-product of HCFC production (HCFC-22 exclusively) only occurred in Canada from 1990–1992. HFC consumption began in 1995.
- Indicates no emissions
0.0 Indicates emissions truncated due to rounding

Table A12-19 1996 GHG Emission Summary for Canada

Greenhouse Gas Categories	Greenhouse Gases								
	CO ₂	CH ₄	CH ₄	N ₂ O	N ₂ O	HFCs	PFCS	SF ₆	TOTAL
	Global Warming Potential Unit	kt	kt	21 kt CO ₂ equivalent	kt	310 kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent
TOTAL¹	507 000	4 200	89 000	180	56 000	850	5 600	1 900	661 000
ENERGY	467 000	2 300	48 000	30	10 000	-	-	-	526 000
a. Stationary Combustion Sources	295 000	200	4 000	8	2 000	-	-	-	302 000
Electricity and Heat Generation	96 900	2.6	55	2	600	-	-	-	97 500
Fossil Fuel Production and Refining	52 800	80	2 000	1	300	-	-	-	55 000
Petroleum Refining	18 400	0.31	6.5	0.17	54	-	-	-	18 400
Fossil Fuel Production	34 000	77	1 600	0.83	257	-	-	-	36 000
Mining & Oil and Gas Extraction	9 040	0.19	4.1	0.2	70	-	-	-	9 110
Manufacturing Industries	56 600	3	60	2	600	-	-	-	57 300
Iron and Steel	6 070	0.3	6	0.2	70	-	-	-	6 140
Non Ferrous Metals	3 920	0.08	2	0.06	20	-	-	-	3 930
Chemical	9 810	0.2	4.2	0.2	50	-	-	-	9 870
Pulp and Paper	13 000	2	30	1	400	-	-	-	13 400
Cement	4 070	0.18	3.8	0.05	20	-	-	-	4 090
Other Manufacturing	19 700	0.39	8.3	0.3	100	-	-	-	19 800
Construction	1 250	0.02	0.44	0.03	10	-	-	-	1 260
Commercial & Institutional	29 300	0.53	11	0.6	200	-	-	-	29 500
Residential	46 700	90	2 000	2	500	-	-	-	49 200
Agriculture & Forestry	2 880	0.04	0.92	0.07	20	-	-	-	2 910
b. Transport²	156 000	40	800	30	8 000	-	-	-	165 000
Civil Aviation (Domestic Aviation)	6 960	0.4	7	0.2	70	-	-	-	7 000
Road Transportation	101 000	10	300	16	5 000	-	-	-	106 000
Light-Duty Gasoline Vehicles	40 000	5.9	120	8.7	2 700	-	-	-	42 800
Light-Duty Gasoline Trucks	26 400	3.2	68	6.2	1 900	-	-	-	28 400
Heavy-Duty Gasoline Vehicles	5 760	0.77	16	0.16	50	-	-	-	5 830
Motorcycles	117	0.11	2.3	0.0	0.75	-	-	-	120
Light-Duty Diesel Vehicles	402	0.01	0.2	0.03	10	-	-	-	412
Light-Duty Diesel Trucks	1 260	0.03	0.7	0.1	30	-	-	-	1 300
Heavy-Duty Diesel Vehicles	25 200	1	30	0.9	300	-	-	-	25 500
Propane & Natural Gas Vehicles	1 930	1	30	0.04	10	-	-	-	2 000
Railways	5 450	0.3	6	2	700	-	-	-	6 200
Navigation (Domestic Marine)	4 130	0.3	6	1	300	-	-	-	4 500
Other Transportation	38 300	20	500	8	2 000	-	-	-	41 000
Off-Road Gasoline	9 080	10	200	0.2	60	-	-	-	9 400
Off-Road Diesel	17 100	0.9	20	7	2 000	-	-	-	19 000
Pipelines	12 100	12	250	0.3	100	-	-	-	12 400
c. Fugitive Sources	16 000	2 100	44 000	0.1	40	-	-	-	60 000
Coal Mining	-	70	1 000	-	-	-	-	-	1 000
Oil and Natural Gas	16 000	2 000	42 000	0.1	40	-	-	-	58 000
Oil	120	250	5 200	0.1	30	-	-	-	5 300
Natural Gas	46	780	16 000	-	-	-	-	-	16 000
Venting	10 000	970	20 000	-	-	-	-	-	31 000
Flaring	5 300	3.5	73	0.0	0.7	-	-	-	5 400
INDUSTRIAL PROCESSES	39 500	4	83	40.6	12 600	850	5 600	1 900	60 500
a. Mineral Products	8 600	-	-	-	-	-	-	-	8 600
Cement Production	5 800	-	-	-	-	-	-	-	5 800
Lime Production	1 800	-	-	-	-	-	-	-	1 800
Mineral Product Use	1 000	-	-	-	-	-	-	-	1 000
b. Chemical Industry³	5 500	4	83	41	13 000	-	-	-	18 000
Ammonia Production	5 480	-	-	-	-	-	-	-	5 480
Nitric Acid Production	-	-	-	3.6	1 100	-	-	-	1 100
Adipic Acid Production	-	-	-	37	11 000	-	-	-	11 000
Petrochemical Production ⁴	-	4	83	0.03	8.7	-	-	-	92
c. Metal Production	15 000	-	-	-	-	-	5 600	1 700	22 300
Iron and Steel Production	11 200	-	-	-	-	-	-	-	11 200
Aluminum Production	3 860	-	-	-	-	-	5 600	59.1	9 520
SF ₆ Used in Magnesium Smelters and Casters	-	-	-	-	-	-	-	1 640	1 640
d. Production and Consumption of Halocarbons and SF₆⁵	-	-	-	-	-	850	21	160	1 000
e. Other & Undifferentiated Production	10 000	-	-	-	-	-	-	-	10 000
SOLVENT & OTHER PRODUCT USE	-	-	-	0.7	220	-	-	-	220
AGRICULTURE	-	1 100	22 000	100	30 000	-	-	-	54 000
a. Enteric Fermentation	-	930	19 000	-	-	-	-	-	19 000
b. Manure Management	-	130	2 800	12.1	3 770	-	-	-	6 600
c. Agriculture Soils	-	-	-	91	28 000	-	-	-	28 000
Direct Sources	-	-	-	49	15 000	-	-	-	15 000
Pasture, Range and Paddock Manure	-	-	-	9.2	2 800	-	-	-	2 800
Indirect Sources	-	-	-	30	10 000	-	-	-	10 000
d. Field Burning of Agricultural Residues	-	5	100	0.1	40	-	-	-	200
WASTE	540	880	18 000	3	800	-	-	-	20 000
a. Solid Waste Disposal on Land	-	860	18 000	-	-	-	-	-	18 000
b. Wastewater Handling	-	16	330	2	600	-	-	-	910
c. Waste Incineration	540	0.4	7	0.8	200	-	-	-	790
LAND USE, LAND-USE CHANGE AND FORESTRY	-38 000	240	5 000	9.7	3 000	-	-	-	-30 000
a. Forest Land	-53 000	210	4 400	8.9	2 700	-	-	-	-45 000
b. Cropland	3 500	5	100	0.3	80	-	-	-	3 700
c. Grassland	-	20	300	0.4	100	-	-	-	500
d. Wetlands	3 000	-	-	-	-	-	-	-	3 000
e. Settlements	8 000	5	100	0.2	50	-	-	-	8 000

Notes:

- National totals exclude all GHGs from the Land Use, Land-use Change and Forestry sector.
 - Emissions from ethanol and biodiesel are included in the Transport categories using gasoline and diesel respectively.
 - Emissions from the Ammonia Production, Nitric Acid Production and Petrochemical Production subcategories are included in Other & Undifferentiated Production within the provincial/territorial tables.
 - The category Petrochemical Production includes CH₄ and N₂O emissions. CO₂ emissions are included in Other & Undifferentiated Production.
 - HFC emissions occurring as a by-product of HCFC production (HCFC-22 exclusively) only occurred in Canada from 1990-1992. HFC consumption began in 1995.
- Indicates no emissions
0.0 Indicates emissions truncated due to rounding

Table A12–20 1995 GHG Emission Summary for Canada

Greenhouse Gas Categories	Greenhouse Gases								
	CO ₂	CH ₄	CH ₄	N ₂ O	N ₂ O	HFCs	PFCs	SF ₆	TOTAL
	Global Warming Potential Unit	kt	kt	21 kt CO ₂ equivalent	kt	310 kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent
TOTAL¹	491 000	4 100	86 000	170	54 000	480	5 500	2 400	639 000
ENERGY	453 000	2 200	45 000	30	10 000	-	-	-	509 000
a. Stationary Combustion Sources	287 000	200	4 000	7	2 000	-	-	-	293 000
Electricity and Heat Generation	97 300	2.9	61	2	600	-	-	-	97 900
Fossil Fuel Production and Refining	51 300	80	2 000	1	300	-	-	-	53 000
Petroleum Refining	15 800	0.28	5.8	0.16	49	-	-	-	15 900
Fossil Fuel Production	35 000	78	1 600	0.83	256	-	-	-	37 000
Mining & Oil and Gas Extraction	8 360	0.19	3.9	0.2	70	-	-	-	8 430
Manufacturing Industries	55 000	3	50	2	600	-	-	-	55 700
Iron and Steel	5 710	0.3	5	0.2	60	-	-	-	5 780
Non Ferrous Metals	3 140	0.06	1	0.04	10	-	-	-	3 150
Chemical	10 200	0.21	4.3	0.2	50	-	-	-	10 200
Pulp and Paper	12 500	1	30	1	400	-	-	-	12 800
Cement	4 090	0.18	3.8	0.05	20	-	-	-	4 110
Other Manufacturing	19 400	0.39	8.1	0.3	100	-	-	-	19 500
Construction	1 160	0.02	0.4	0.03	10	-	-	-	1 170
Commercial & Institutional	28 700	0.52	11	0.6	200	-	-	-	28 900
Residential	42 000	100	2 000	2	500	-	-	-	44 600
Agriculture & Forestry	2 720	0.04	0.86	0.07	21	-	-	-	2 750
b. Transport²	152 000	40	700	30	8 000	-	-	-	161 000
Civil Aviation (Domestic Aviation)	6 510	0.4	8	0.2	60	-	-	-	6 600
Road Transportation	102 000	10	300	16	4 800	-	-	-	107 000
Light-Duty Gasoline Vehicles	41 000	6.3	130	8.7	2 700	-	-	-	43 800
Light-Duty Gasoline Trucks	25 400	3.2	67	5.8	1 800	-	-	-	27 300
Heavy-Duty Gasoline Vehicles	6 170	0.87	18	0.14	45	-	-	-	6 230
Motorcycles	121	0.12	2.6	0.0	0.79	-	-	-	125
Light-Duty Diesel Vehicles	419	0.01	0.2	0.03	10	-	-	-	429
Light-Duty Diesel Trucks	1 280	0.03	0.7	0.1	30	-	-	-	1 310
Heavy-Duty Diesel Vehicles	25 800	1	30	0.8	200	-	-	-	26 100
Propane & Natural Gas Vehicles	2 050	1	30	0.04	10	-	-	-	2 100
Railways	5 570	0.3	6	2	700	-	-	-	6 300
Navigation (Domestic Marine)	4 020	0.3	6	1	300	-	-	-	4 400
Other Transportation	33 600	20	400	6	2 000	-	-	-	36 000
Off-Road Gasoline	7 460	9	200	0.2	50	-	-	-	7 700
Off-Road Diesel	14 500	0.8	20	6	2 000	-	-	-	16 000
Pipelines	11 600	12	240	0.3	100	-	-	-	11 900
c. Fugitive Sources	15 000	1 900	41 000	0.1	40	-	-	-	55 000
Coal Mining	-	70	2 000	-	-	-	-	-	2 000
Oil and Natural Gas	15 000	1 900	39 000	0.1	40	-	-	-	54 000
Oil	120	240	5 000	0.1	30	-	-	-	5 100
Natural Gas	34	710	15 000	-	-	-	-	-	15 000
Venting	9 600	910	19 000	-	-	-	-	-	29 000
Flaring	5 000	3.3	69	0.0	0.3	-	-	-	5 100
INDUSTRIAL PROCESSES	37 100	3.9	81	37.9	11 700	480	5 500	2 400	57 300
a. Mineral Products	8 800	-	-	-	-	-	-	-	8 800
Cement Production	6 100	-	-	-	-	-	-	-	6 100
Lime Production	1 860	-	-	-	-	-	-	-	1 860
Mineral Product Use	890	-	-	-	-	-	-	-	890
b. Chemical Industry³	5 300	3.9	81	38	12 000	-	-	-	17 000
Ammonia Production	5 290	-	-	-	-	-	-	-	5 290
Nitric Acid Production	-	-	-	3.2	1 000	-	-	-	1 000
Adipic Acid Production	-	-	-	35	11 000	-	-	-	11 000
Petrochemical Production ⁴	-	3.9	81	0.03	8.5	-	-	-	90
c. Metal Production	15 000	-	-	-	-	-	5 460	2 170	22 600
Iron and Steel Production	11 300	-	-	-	-	-	-	-	11 300
Aluminum Production	3 640	-	-	-	-	-	5 460	59.1	9 160
SF ₆ Used in Magnesium Smelters and Casters	-	-	-	-	-	-	-	2 110	2 110
d. Production and Consumption of Halocarbons and SF₆⁵	8 000	-	-	-	-	480	28	230	730
e. Other & Undifferentiated Production	8 000	-	-	-	-	-	-	-	8 000
SOLVENT & OTHER PRODUCT USE	-	-	-	0.69	210	-	-	-	210
AGRICULTURE	-	1 000	22 000	100	30 000	-	-	-	53 000
a. Enteric Fermentation	-	910	19 000	-	-	-	-	-	19 000
b. Manure Management	-	130	2 800	12.1	3 740	-	-	-	6 500
c. Agriculture Soils	-	-	-	87	27 000	-	-	-	27 000
Direct Sources	-	-	-	47	15 000	-	-	-	15 000
Pasture, Range and Paddock Manure	-	-	-	9.1	2 800	-	-	-	2 800
Indirect Sources	-	-	-	30	10 000	-	-	-	10 000
d. Field Burning of Agricultural Residues	-	6	100	0.1	50	-	-	-	200
WASTE	580	890	19 000	3	800	-	-	-	20 000
a. Solid Waste Disposal on Land	-	870	18 000	-	-	-	-	-	18 000
b. Wastewater Handling	-	16	330	2	600	-	-	-	900
c. Waste Incineration	580	0.4	8	0.9	300	-	-	-	850
LAND USE, LAND-USE CHANGE AND FORESTRY	160 000	950	20 000	40	12 000	-	-	-	200 000
a. Forest Land	150 000	920	19 000	39	12 000	-	-	-	180 000
b. Cropland	5 100	8	200	0.4	100	-	-	-	5 400
c. Grassland	-	9	200	0.2	70	-	-	-	300
d. Wetlands	3 000	-	-	0.0	-	-	-	-	3 000
e. Settlements	8 000	4	90	0.1	50	-	-	-	8 000

Notes:

- National totals exclude all GHGs from the Land Use, Land-use Change and Forestry sector.
- Emissions from ethanol and biodiesel are included in the Transport categories using gasoline and diesel respectively.
- Emissions from the Ammonia Production, Nitric Acid Production and Petrochemical Production subcategories are included in Other & Undifferentiated Production within the provincial/territorial tables.
- The category Petrochemical Production includes CH₄ and N₂O emissions. CO₂ emissions are included in Other & Undifferentiated Production.
- Production of HFCs (HCFC-22 exclusively) only occurred in Canada from 1990-1992. HFC consumption began in 1995.
- Indicates no emissions
- 0.0 Indicates emissions truncated due to rounding

Table A12-21 1994 GHG Emission Summary for Canada

Greenhouse Gas Categories	Greenhouse Gases								
	CO ₂	CH ₄	CH ₄	N ₂ O	N ₂ O	HFCs	PFCS	SF ₆	TOTAL
	Global Warming Potential Unit	21	21	310	310	kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent
TOTAL¹	478 000	3 900	83 000	170	53 000	-	6 000	2 600	622 000
ENERGY	442 000	2 000	43 000	30	10 000	-	-	-	495 000
a. Stationary Combustion Sources	279 000	200	4 000	7	2 000	-	-	-	285 000
Electricity and Heat Generation	94 000	2.5	53	2	500	-	-	-	94 600
Fossil Fuel Production and Refining	50 000	80	2 000	1	300	-	-	-	52 000
Petroleum Refining	15 400	0.25	5.2	0.15	46	-	-	-	15 500
Fossil Fuel Production	35 000	77	1 600	0.81	252	-	-	-	36 000
Mining & Oil and Gas Extraction	7 920	0.17	3.6	0.2	50	-	-	-	7 970
Manufacturing Industries	53 200	3	50	2	600	-	-	-	53 900
Iron and Steel	5 950	0.3	6	0.2	60	-	-	-	6 020
Non Ferrous Metals	3 340	0.07	2	0.05	20	-	-	-	3 350
Chemical	9 900	0.2	4.3	0.2	50	-	-	-	9 960
Pulp and Paper	12 500	2	30	1	400	-	-	-	12 900
Cement	4 000	0.2	4.3	0.05	20	-	-	-	4 030
Other Manufacturing	17 500	0.36	7.5	0.3	100	-	-	-	17 600
Construction	1 380	0.02	0.49	0.03	10	-	-	-	1 390
Commercial & Institutional	27 100	0.52	11	0.6	200	-	-	-	27 300
Residential	43 300	100	2 000	2	500	-	-	-	45 900
Agriculture & Forestry	2 510	0.04	0.81	0.06	19	-	-	-	2 530
b. Transport²	148 000	30	700	20	8 000	-	-	-	157 000
Civil Aviation (Domestic Aviation)	6 140	0.3	7	0.2	60	-	-	-	6 200
Road Transportation	101 000	10	300	15	4 600	-	-	-	106 000
Light-Duty Gasoline Vehicles	41 600	6.6	140	8.5	2 600	-	-	-	44 400
Light-Duty Gasoline Trucks	24 700	3.2	68	5.4	1 700	-	-	-	26 500
Heavy-Duty Gasoline Vehicles	6 610	0.96	20	0.16	49	-	-	-	6 680
Motorcycles	125	0.13	2.7	0.0	0.82	-	-	-	129
Light-Duty Diesel Vehicles	435	0.01	0.2	0.03	10	-	-	-	446
Light-Duty Diesel Trucks	1 110	0.03	0.6	0.08	30	-	-	-	1 140
Heavy-Duty Diesel Vehicles	24 400	1	30	0.7	200	-	-	-	24 700
Propane & Natural Gas Vehicles	1 880	1	30	0.04	10	-	-	-	1 900
Railways	6 150	0.3	7	3	800	-	-	-	6 900
Navigation (Domestic Marine)	4 310	0.3	6	1	300	-	-	-	4 700
Other Transportation	30 700	20	400	6	2 000	-	-	-	33 000
Off-Road Gasoline	6 920	8	200	0.2	50	-	-	-	7 100
Off-Road Diesel	13 400	0.7	20	6	2 000	-	-	-	15 000
Pipelines	10 400	10	220	0.3	90	-	-	-	10 700
c. Fugitive Sources	14 000	1 800	38 000	0.1	40	-	-	-	53 000
Coal Mining	-	80	2 000	-	-	-	-	-	2 000
Oil and Natural Gas	14 000	1 700	37 000	0.1	40	-	-	-	51 000
Oil	110	220	4 600	0.1	30	-	-	-	4 800
Natural Gas	31	680	14 000	-	-	-	-	-	14 000
Venting	9 300	840	18 000	-	-	-	-	-	27 000
Flaring	4 700	3.1	66	0.0	1	-	-	-	4 800
INDUSTRIAL PROCESSES	35 900	4	84	38.5	11 900	-	6 000	2 600	56 400
a. Mineral Products	8 200	-	-	-	-	-	-	-	8 200
Cement Production	5 400	-	-	-	-	-	-	-	5 400
Lime Production	1 850	-	-	-	-	-	-	-	1 850
Mineral Product Use	930	-	-	-	-	-	-	-	930
b. Chemical Industry³	5 700	4	84	38	12 000	-	-	-	18 000
Ammonia Production	5 650	-	-	-	-	-	-	-	5 650
Nitric Acid Production	-	-	-	3.1	960	-	-	-	960
Adipic Acid Production	-	-	-	35	11 000	-	-	-	11 000
Petrochemical Production ⁴	-	4	84	0.03	8.2	-	-	-	92
c. Metal Production	14 700	-	-	-	-	-	5 970	2 340	23 000
Iron and Steel Production	10 900	-	-	-	-	-	-	-	10 900
Aluminum Production	3 770	-	-	-	-	-	5 970	59.1	9 800
SF ₆ Used in Magnesium Smelters and Casters	-	-	-	-	-	-	-	2 280	2 280
d. Production and Consumption of Halocarbons and SF₆⁵	-	-	-	-	-	-	-	230	230
e. Other & Undifferentiated Production	7 400	-	-	-	-	-	-	-	7 400
SOLVENT & OTHER PRODUCT USE	-	-	-	0.57	180	-	-	-	180
AGRICULTURE	-	1 000	21 000	100	30 000	-	-	-	51 000
a. Enteric Fermentation	-	870	18 000	-	-	-	-	-	18 000
b. Manure Management	-	130	2 600	11.5	3 580	-	-	-	6 200
c. Agriculture Soils	-	-	-	86	27 000	-	-	-	27 000
Direct Sources	-	-	-	47	14 000	-	-	-	14 000
Pasture, Range and Paddock Manure	-	-	-	8.6	2 700	-	-	-	2 700
Indirect Sources	-	-	-	30	9 000	-	-	-	9 000
d. Field Burning of Agricultural Residues	-	6	100	0.1	40	-	-	-	200
WASTE	550	890	19 000	3	800	-	-	-	20 000
a. Solid Waste Disposal on Land	-	870	18 000	-	-	-	-	-	18 000
b. Wastewater Handling	-	16	330	2	600	-	-	-	890
c. Waste Incineration	550	0.3	7	0.8	200	-	-	-	790
LAND USE, LAND-USE CHANGE AND FORESTRY	-38 000	310	6 400	12	3 900	-	-	-	-27 000
a. Forest Land	-56 000	270	5 600	11	3 500	-	-	-	-47 000
b. Cropland	6 500	8	200	0.4	100	-	-	-	6 700
c. Grassland	-	30	600	0.8	200	-	-	-	900
d. Wetlands	3 000	-	-	0.0	-	-	-	-	3 000
e. Settlements	8 000	4	90	0.2	50	-	-	-	8 000

Notes:

- National totals exclude all GHGs from the Land Use, Land-use Change and Forestry sector.
 - Emissions from ethanol and biodiesel are included in the Transport categories using gasoline and diesel respectively.
 - Emissions from the Ammonia Production, Nitric Acid Production and Petrochemical Production subcategories are included in Other & Undifferentiated Production within the provincial/territorial tables.
 - The category Petrochemical Production includes CH₄ and N₂O emissions. CO₂ emissions are included in Other & Undifferentiated Production.
 - HFC emissions occurring as a by-product of HCFC production (HCFC-22 exclusively) only occurred in Canada from 1990-1992. HFC consumption began in 1995.
- Indicates no emissions
0.0 Indicates emissions truncated due to rounding

Table A12–22 1993 GHG Emission Summary for Canada

Greenhouse Gas Categories	Greenhouse Gases								
	CO ₂	CH ₄	CH ₄	N ₂ O	N ₂ O	HFCs	PFCS	SF ₆	TOTAL
	Global Warming Potential <i>Unit</i>								
	kt	kt	kt CO ₂ equivalent	kt	310 kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent
TOTAL¹	464 000	3 800	80 000	160	50 000	-	6 500	2 500	602 000
ENERGY	428 000	1 900	41 000	30	9 000	-	-	-	478 000
a. Stationary Combustion Sources	274 000	200	4 000	7	2 000	-	-	-	280 000
Electricity and Heat Generation	91 700	2.5	52	2	500	-	-	-	92 300
Fossil Fuel Production and Refining	49 700	70	2 000	1	300	-	-	-	51 000
Petroleum Refining	16 500	0.29	6.1	0.16	50	-	-	-	16 500
Fossil Fuel Production	33 000	73	1 500	0.79	244	-	-	-	35 000
Mining & Oil and Gas Extraction	7 730	0.17	3.5	0.2	50	-	-	-	7 790
Manufacturing Industries	49 900	2	50	2	500	-	-	-	50 500
Iron and Steel	5 330	0.3	5	0.2	60	-	-	-	5 390
Non Ferrous Metals	2 750	0.06	1	0.04	10	-	-	-	2 760
Chemical	8 430	0.17	3.6	0.1	50	-	-	-	8 480
Pulp and Paper	12 600	1	30	1	300	-	-	-	13 000
Cement	3 410	0.13	2.6	0.04	10	-	-	-	3 430
Other Manufacturing	17 300	0.36	7.6	0.3	100	-	-	-	17 500
Construction	1 370	0.02	0.49	0.03	10	-	-	-	1 380
Commercial & Institutional	27 800	0.51	11	0.6	200	-	-	-	28 000
Residential	42 500	100	2 000	2	500	-	-	-	45 100
Agriculture & Forestry	3 000	0.05	1	0.07	22	-	-	-	3 030
b. Transport²	141 000	30	700	20	7 000	-	-	-	149 000
Civil Aviation (Domestic Aviation)	5 870	0.3	7	0.2	60	-	-	-	5 900
Road Transportation	95 400	10	300	14	4 300	-	-	-	99 900
Light-Duty Gasoline Vehicles	42 100	6.9	140	8	2 500	-	-	-	44 700
Light-Duty Gasoline Trucks	23 000	3.1	66	4.8	1 500	-	-	-	24 600
Heavy-Duty Gasoline Vehicles	6 150	0.94	20	0.16	49	-	-	-	6 220
Motorcycles	133	0.13	2.8	0.0	0.86	-	-	-	137
Light-Duty Diesel Vehicles	446	0.01	0.3	0.03	10	-	-	-	457
Light-Duty Diesel Trucks	942	0.03	0.5	0.07	20	-	-	-	965
Heavy-Duty Diesel Vehicles	20 600	1	20	0.6	200	-	-	-	20 800
Propane & Natural Gas Vehicles	1 980	1	30	0.04	10	-	-	-	2 000
Railways	5 950	0.3	7	2	800	-	-	-	6 700
Navigation (Domestic Marine)	4 150	0.3	6	1	300	-	-	-	4 500
Other Transportation	30 000	20	400	6	2 000	-	-	-	32 000
Off-Road Gasoline	6 450	8	200	0.1	40	-	-	-	6 700
Off-Road Diesel	13 600	0.7	20	6	2 000	-	-	-	15 000
Pipelines	10 000	10	210	0.3	80	-	-	-	10 300
c. Fugitive Sources	13 000	1 700	36 000	0.1	30	-	-	-	49 000
Coal Mining	-	80	2 000	-	-	-	-	-	2 000
Oil and Natural Gas	13 000	1 700	35 000	0.1	30	-	-	-	47 000
Oil	110	220	4 500	0.1	30	-	-	-	4 700
Natural Gas	29	640	13 000	-	-	-	-	-	13 000
Venting	8 000	790	17 000	-	-	-	-	-	25 000
Flaring	4 500	3	64	0.0	0.7	-	-	-	4 600
INDUSTRIAL PROCESSES	35 700	3.9	82	32.7	10 100	-	6 500	2 500	54 900
a. Mineral Products	7 100	-	-	-	-	-	-	-	7 100
Cement Production	4 600	-	-	-	-	-	-	-	4 600
Lime Production	1 800	-	-	-	-	-	-	-	1 800
Mineral Product Use	790	-	-	-	-	-	-	-	790
b. Chemical Industry³	5 300	3.9	82	33	10 000	-	-	-	16 000
Ammonia Production	5 300	-	-	-	-	-	-	-	5 300
Nitric Acid Production	-	-	-	3.4	1 100	-	-	-	1 100
Adipic Acid Production	-	-	-	29	9 100	-	-	-	9 100
Petrochemical Production ⁴	-	3.9	82	0.03	8.2	-	-	-	90
c. Metal Production	15 700	-	-	-	-	-	6 450	2 270	24 400
Iron and Steel Production	11 800	-	-	-	-	-	-	-	11 800
Aluminum Production	3 910	-	-	-	-	-	6 450	59.1	10 400
SF ₆ Used in Magnesium Smelters and Casters	-	-	-	-	-	-	-	2 210	2 210
d. Production and Consumption of Halocarbons and SF₆⁵	-	-	-	-	-	-	-	230	230
e. Other & Undifferentiated Production	7 600	-	-	-	-	-	-	-	7 600
SOLVENT & OTHER PRODUCT USE	-	-	-	0.51	160	-	-	-	160
AGRICULTURE	-	960	20 000	90	30 000	-	-	-	49 000
a. Enteric Fermentation	-	830	17 000	-	-	-	-	-	17 000
b. Manure Management	-	120	2 600	11.1	3 440	-	-	-	6 000
c. Agriculture Soils	-	-	-	82	26 000	-	-	-	26 000
Direct Sources	-	-	-	45	14 000	-	-	-	14 000
Pasture, Range and Paddock Manure	-	-	-	8.2	2 500	-	-	-	2 500
Indirect Sources	-	-	-	30	9 000	-	-	-	9 000
d. Field Burning of Agricultural Residues	-	5	100	0.1	40	-	-	-	200
WASTE	520	890	19 000	2	800	-	-	-	20 000
a. Solid Waste Disposal on Land	-	870	18 000	-	-	-	-	-	18 000
b. Wastewater Handling	-	15	330	2	500	-	-	-	870
c. Waste Incineration	520	0.3	7	0.7	200	-	-	-	750
Land Use, Land-use Change and Forestry	-45 000	280	5 800	11	3 500	-	-	-	-35 000
a. Forest Land	-66 000	250	5 200	10	3 200	-	-	-	-58 000
b. Cropland	7 900	9	200	0.4	100	-	-	-	8 200
c. Grassland	-	10	300	0.3	100	-	-	-	400
d. Wetlands	5 000	-	-	0.01	-	-	-	-	5 000
e. Settlements	9 000	5	100	0.2	50	-	-	-	9 000

Notes:

- National totals exclude all GHGs from the Land Use, Land-use Change and Forestry sector.
 - Emissions from ethanol and biodiesel are included in the Transport categories using gasoline and diesel respectively.
 - Emissions from the Ammonia Production, Nitric Acid Production and Petrochemical Production subcategories are included in Other & Undifferentiated Production within the provincial/territorial tables.
 - The category Petrochemical Production includes CH₄ and N₂O emissions. CO₂ emissions are included in Other & Undifferentiated Production.
 - HFC emissions occurring as a by-product of HCFC production (HCFC-22 exclusively) only occurred in Canada from 1990–1992. HFC consumption began in 1995.
- Indicates no emissions
0.0 Indicates emissions truncated due to rounding

Table A12-23 1992 GHG Emission Summary for Canada

Greenhouse Gas Categories	Greenhouse Gases								
	CO ₂	CH ₄	CH ₄	N ₂ O	N ₂ O	HFCs	PFCS	SF ₆	TOTAL
	Global Warming Potential <i>Unit</i>								
	kt	kt	kt CO ₂ equivalent	kt	kt CO ₂ equivalent				
TOTAL¹	464 000	3 700	77 000	160	49 000	660	6 600	2 700	600 000
ENERGY	430 000	1 900	39 000	30	9 000	-	-	-	478 000
a. Stationary Combustion Sources	279 000	200	4 000	7	2 000	-	-	-	285 000
Electricity and Heat Generation	101 000	2.3	48	2	600	-	-	-	101 000
Fossil Fuel Production and Refining	49 100	70	2 000	0.9	300	-	-	-	51 000
Petroleum Refining	16 000	0.27	5.7	0.15	46	-	-	-	16 000
Fossil Fuel Production	33 000	74	1 500	0.8	248	-	-	-	35 000
Mining & Oil and Gas Extraction	5 270	0.12	2.6	0.1	40	-	-	-	5 310
Manufacturing Industries	52 000	2	50	2	600	-	-	-	52 600
Iron and Steel	5 230	0.3	6	0.2	60	-	-	-	5 300
Non Ferrous Metals	2 860	0.06	1	0.04	10	-	-	-	2 870
Chemical	8 510	0.17	3.6	0.1	50	-	-	-	8 560
Pulp and Paper	12 600	1	30	1	300	-	-	-	13 000
Cement	3 350	0.09	2	0.04	10	-	-	-	3 370
Other Manufacturing	19 500	0.41	8.6	0.4	100	-	-	-	19 600
Construction	1 730	0.03	0.62	0.06	20	-	-	-	1 750
Commercial & Institutional	26 800	0.49	10	0.5	200	-	-	-	26 900
Residential	40 500	90	2 000	2	500	-	-	-	43 000
Agriculture & Forestry	3 200	0.05	0.99	0.08	24	-	-	-	3 230
b. Transport²	138 000	30	700	20	7 000	-	-	-	146 000
Civil Aviation (Domestic Aviation)	6 210	0.3	7	0.2	60	-	-	-	6 300
Road Transportation	92 900	10	300	12	3 700	-	-	-	96 900
Light-Duty Gasoline Vehicles	42 200	7.2	150	6.9	2 100	-	-	-	44 500
Light-Duty Gasoline Trucks	21 300	3.1	66	4	1 200	-	-	-	22 600
Heavy-Duty Gasoline Vehicles	6 280	0.99	21	0.17	51	-	-	-	6 350
Motorcycles	136	0.14	2.9	0.0	0.89	-	-	-	140
Light-Duty Diesel Vehicles	444	0.01	0.3	0.03	10	-	-	-	454
Light-Duty Diesel Trucks	795	0.02	0.5	0.06	20	-	-	-	814
Heavy-Duty Diesel Vehicles	19 200	1	20	0.6	200	-	-	-	19 400
Propane & Natural Gas Vehicles	2 620	2	30	0.05	20	-	-	-	2 700
Railways	5 970	0.3	7	2	800	-	-	-	6 700
Navigation (Domestic Marine)	4 750	0.3	7	1	300	-	-	-	5 100
Other Transportation	28 500	20	400	6	2 000	-	-	-	31 000
Off-Road Gasoline	6 250	7	200	0.1	40	-	-	-	6 500
Off-Road Diesel	12 700	0.7	10	5	2 000	-	-	-	14 000
Pipelines	9 530	9.6	200	0.3	80	-	-	-	9 810
c. Fugitive Sources	12 000	1 700	35 000	0.1	30	-	-	-	47 000
Coal Mining	-	80	2 000	-	-	-	-	-	2 000
Oil and Natural Gas	12 000	1 600	33 000	0.1	30	-	-	-	45 000
Oil	110	220	4 500	0.1	30	-	-	-	4 700
Natural Gas	26	600	13 000	-	-	-	-	-	13 000
Venting	7 700	750	16 000	-	-	-	-	-	23 000
Flaring	4 200	2.7	58	0.0	0.7	-	-	-	4 300
INDUSTRIAL PROCESSES	34 000	4	83	35.6	11 000	660	6 600	2 700	55 000
a. Mineral Products	7 200	-	-	-	-	-	-	-	7 200
Cement Production	4 500	-	-	-	-	-	-	-	4 500
Lime Production	1 800	-	-	-	-	-	-	-	1 800
Mineral Product Use	950	-	-	-	-	-	-	-	950
b. Chemical Industry³	4 200	4	83	36	11 000	-	-	-	15 000
Ammonia Production	4 240	-	-	-	-	-	-	-	4 240
Nitric Acid Production	-	-	-	3.5	1 100	-	-	-	1 100
Adipic Acid Production	-	-	-	32	10 000	-	-	-	10 000
Petrochemical Production ⁴	-	4	83	0.03	8.3	-	-	-	92
c. Metal Production	15 500	-	-	-	-	-	6 560	2 460	24 500
Iron and Steel Production	12 200	-	-	-	-	-	-	-	12 200
Aluminum Production	3 270	-	-	-	-	-	6 560	59.1	9 890
SF ₆ Used in Magnesium Smelters and Casters	-	-	-	-	-	-	-	2 400	2 400
d. Production and Consumption of Halocarbons and SF₆⁵	-	-	-	-	-	660	-	230	880
e. Other & Undifferentiated Production	7 100	-	-	-	-	-	-	-	7 100
SOLVENT & OTHER PRODUCT USE	-	-	-	0.46	140	-	-	-	140
AGRICULTURE	-	950	20 000	90	30 000	-	-	-	48 000
a. Enteric Fermentation	-	820	17 000	-	-	-	-	-	17 000
b. Manure Management	-	130	2 600	10.9	3 380	-	-	-	6 000
c. Agriculture Soils	-	-	-	79	24 000	-	-	-	24 000
Direct Sources	-	-	-	43	13 000	-	-	-	13 000
Pasture, Range and Paddock Manure	-	-	-	7.9	2 500	-	-	-	2 500
Indirect Sources	-	-	-	30	9 000	-	-	-	9 000
d. Field Burning of Agricultural Residues	-	5	100	0.1	40	-	-	-	100
WASTE	530	870	18 000	3	800	-	-	-	20 000
a. Solid Waste Disposal on Land	-	860	18 000	-	-	-	-	-	18 000
b. Wastewater Handling	-	15	320	2	500	-	-	-	860
c. Waste Incineration	530	0.5	10	0.8	200	-	-	-	780
LAND USE, LAND-USE CHANGE AND FORESTRY	-94 000	140	2 800	5.1	1 600	-	-	-	-90 000
a. Forest Land	-120 000	81	1 700	3.4	1 100	-	-	-	-110 000
b. Cropland	9 500	10	200	0.5	100	-	-	-	9 900
c. Grassland	-	40	800	1	300	-	-	-	1 000
d. Wetlands	5 000	1	-	-	10	-	-	-	5 000
e. Settlements	9 000	5	100	0.2	50	-	-	-	9 000

Notes:

- National totals exclude all GHGs from the Land Use, Land-use Change and Forestry sector.
 - Emissions from ethanol and biodiesel are included in the Transport categories using gasoline and diesel respectively.
 - Emissions from the Ammonia Production, Nitric Acid Production and Petrochemical Production subcategories are included in Other & Undifferentiated Production within the provincial/territorial tables.
 - The category Petrochemical Production includes CH₄ and N₂O emissions. CO₂ emissions are included in Other & Undifferentiated Production.
 - HFC emissions occurring as a by-product of HCFC production (HCFC-22 exclusively) only occurred in Canada from 1990-1992. HFC consumption began in 1995.
- Indicates no emissions
0.0 Indicates emissions truncated due to rounding

Table A12–24 1991 GHG Emission Summary for Canada

Greenhouse Gas Categories	Greenhouse Gases								
	CO ₂	CH ₄	CH ₄	N ₂ O	N ₂ O	HFCs	PFCS	SF ₆	TOTAL
	Global Warming Potential Unit	kt	kt	21 kt CO ₂ equivalent	kt	310 kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent	kt CO ₂ equivalent
TOTAL¹	450 000	3 500	74 000	150	48 000	840	6 900	3 900	583 000
ENERGY	415 000	1 700	36 000	30	9 000	-	-	-	460 000
a. Stationary Combustion Sources	269 000	200	4 000	7	2 000	-	-	-	275 000
Electricity and Heat Generation	94 400	1.6	35	2	500	-	-	-	95 000
Fossil Fuel Production and Refining	46 700	70	1 000	0.9	300	-	-	-	48 000
Petroleum Refining	15 800	0.28	5.8	0.16	50	-	-	-	15 900
Fossil Fuel Production	31 000	70	1 500	0.76	237	-	-	-	33 000
Mining & Oil and Gas Extraction	5 420	0.12	2.6	0.1	40	-	-	-	5 460
Manufacturing Industries	53 000	2	50	2	600	-	-	-	53 600
Iron and Steel	4 900	0.3	5	0.2	60	-	-	-	4 960
Non Ferrous Metals	2 630	0.06	1	0.04	10	-	-	-	2 640
Chemical	8 560	0.17	3.6	0.1	50	-	-	-	8 610
Pulp and Paper	13 700	1	30	1	300	-	-	-	14 000
Cement	3 330	0.08	1.6	0.04	10	-	-	-	3 340
Other Manufacturing	19 900	0.41	8.6	0.4	100	-	-	-	20 000
Construction	1 610	0.03	0.57	0.05	20	-	-	-	1 620
Commercial & Institutional	26 200	0.5	10	0.5	200	-	-	-	26 300
Residential	39 400	90	2 000	2	500	-	-	-	41 900
Agriculture & Forestry	2 700	0.04	0.84	0.06	18	-	-	-	2 720
b. Transport²	135 000	30	600	20	6 000	-	-	-	142 000
Civil Aviation (Domestic Aviation)	6 200	0.4	8	0.2	60	-	-	-	6 300
Road Transportation	91 200	10	300	11	3 500	-	-	-	94 900
Light-Duty Gasoline Vehicles	42 000	7.2	150	6.7	2 100	-	-	-	44 300
Light-Duty Gasoline Trucks	19 900	3	62	3.7	1 100	-	-	-	21 100
Heavy-Duty Gasoline Vehicles	6 570	1.1	22	0.18	55	-	-	-	6 650
Motorcycles	140	0.14	3	0.0	0.91	-	-	-	144
Light-Duty Diesel Vehicles	445	0.01	0.3	0.03	10	-	-	-	456
Light-Duty Diesel Trucks	722	0.02	0.4	0.05	20	-	-	-	739
Heavy-Duty Diesel Vehicles	19 000	1	20	0.6	200	-	-	-	19 200
Propane & Natural Gas Vehicles	2 270	1	30	0.04	10	-	-	-	2 300
Railways	5 710	0.3	7	2	700	-	-	-	6 400
Navigation (Domestic Marine)	4 900	0.4	7	1	300	-	-	-	5 200
Other Transportation	26 800	20	300	6	2 000	-	-	-	29 000
Off-Road Gasoline	6 430	8	200	0.1	40	-	-	-	6 600
Off-Road Diesel	13 000	0.7	20	5	2 000	-	-	-	15 000
Pipelines	7 370	7.4	160	0.2	60	-	-	-	7 590
c. Fugitive Sources	11 000	1 500	32 000	0.1	30	-	-	-	43 000
Coal Mining	-	100	2 000	-	-	-	-	-	2 000
Oil and Natural Gas	11 000	1 400	30 000	0.1	30	-	-	-	41 000
Oil	100	200	4 200	0.1	30	-	-	-	4 300
Natural Gas	24	560	12 000	-	-	-	-	-	12 000
Venting	6 900	650	14 000	-	-	-	-	-	21 000
Flaring	4 100	2.5	53	0.0	0.4	-	-	-	4 200
INDUSTRIAL PROCESSES	34 400	4.4	92	35.7	11 100	840	6 900	3 900	57 200
a. Mineral Products	7 500	-	-	-	-	-	-	-	7 500
Cement Production	4 400	-	-	-	-	-	-	-	4 400
Lime Production	1 790	-	-	-	-	-	-	-	1 790
Mineral Product Use	1 200	-	-	-	-	-	-	-	1 200
b. Chemical Industry³	4 500	4.4	92	36	11 000	-	-	-	16 000
Ammonia Production	4 510	-	-	-	-	-	-	-	4 510
Nitric Acid Production	-	-	-	3.4	1 100	-	-	-	1 100
Adipic Acid Production	-	-	-	32	10 000	-	-	-	10 000
Petrochemical Production ⁴	-	4.4	92	0.03	8	-	-	-	100
c. Metal Production	15 100	-	-	-	-	-	6 950	3 650	25 700
Iron and Steel Production	11 900	-	-	-	-	-	-	-	11 900
Aluminum Production	3 150	-	-	-	-	-	6 950	59.1	10 200
SF ₆ Used in Magnesium Smelters and Casters	-	-	-	-	-	-	-	3 590	3 590
d. Production and Consumption of Halocarbons and SF₆⁵	-	-	-	-	-	840	-	230	1 100
e. Other & Undifferentiated Production	7 400	-	-	-	-	-	-	-	7 400
SOLVENT & OTHER PRODUCT USE	-	-	-	0.55	170	-	-	-	170
AGRICULTURE	-	910	19 000	90	30 000	-	-	-	46 000
a. Enteric Fermentation	-	780	16 000	-	-	-	-	-	16 000
b. Manure Management	-	120	2 600	10.4	3 220	-	-	-	5 800
c. Agriculture Soils	-	-	-	78	24 000	-	-	-	24 000
Direct Sources	-	-	-	43	13 000	-	-	-	13 000
Pasture, Range and Paddock Manure	-	-	-	7.3	2 300	-	-	-	2 300
Indirect Sources	-	-	-	30	8 000	-	-	-	8 000
d. Field Burning of Agricultural Residues	-	6	100	0.2	50	-	-	-	200
WASTE	510	860	18 000	2	800	-	-	-	19 000
a. Solid Waste Disposal on Land	-	850	18 000	-	-	-	-	-	18 000
b. Wastewater Handling	-	15	320	2	500	-	-	-	850
c. Waste Incineration	510	0.5	10	0.7	200	-	-	-	750
Land Use, Land-use Change and Forestry	-50 000	290	6 100	12	3 600	-	-	-	-41 000
a. Forest Land	-75 000	250	5 200	10	3 200	-	-	-	-67 000
b. Cropland	11 000	10	200	0.5	200	-	-	-	11 000
c. Grassland	-	20	500	0.6	200	-	-	-	700
d. Wetlands	5 000	-	10	-	10	-	-	-	5 000
e. Settlements	9 000	5	100	0.2	60	-	-	-	9 000

Notes:

- National totals exclude all GHGs from the Land Use, Land-use Change and Forestry sector.
 - Emissions from ethanol and biodiesel are included in the Transport categories using gasoline and diesel respectively.
 - Emissions from the Ammonia Production, Nitric Acid Production and Petrochemical Production subcategories are included in Other & Undifferentiated Production within the provincial/territorial tables.
 - The category Petrochemical Production includes CH₄ and N₂O emissions. CO₂ emissions are included in Other & Undifferentiated Production.
 - HFC emissions occurring as a by-product of HCFC production (HCFC-22 exclusively) only occurred in Canada from 1990–1992. HFC consumption began in 1995.
- Indicates no emissions
0.0 Indicates emissions truncated due to rounding

Table A12-25 1990 GHG Emission Summary for Canada

Greenhouse Gas Categories	Greenhouse Gases								
	CO ₂	CH ₄	CH ₄	N ₂ O	N ₂ O	HFCs	PFCS	SF ₆	TOTAL
	Global Warming Potential <i>Unit</i>								
	kt	kt	kt CO ₂ equivalent	kt	kt CO ₂ equivalent				
TOTAL¹	459 000	3 400	72 000	160	49 000	770	6 500	3 400	591 000
ENERGY	425 000	1 700	35 000	30	9 000	-	-	-	469 000
a. Stationary Combustion Sources	274 000	200	4 000	7	2 000	-	-	-	280 000
Electricity and Heat Generation	93 000	1.8	37	2	500	-	-	-	93 600
Fossil Fuel Production and Refining	49 000	70	2 000	1	300	-	-	-	51 000
Petroleum Refining	16 700	0.28	5.9	0.16	49	-	-	-	16 800
Fossil Fuel Production	32 000	74	1 600	0.81	250	-	-	-	34 000
Mining & Oil and Gas Extraction	6 550	0.14	3	0.1	40	-	-	-	6 590
Manufacturing Industries	55 200	2	50	2	600	-	-	-	55 800
Iron and Steel	4 880	0.2	5	0.2	60	-	-	-	4 950
Non Ferrous Metals	3 240	0.07	1	0.05	10	-	-	-	3 260
Chemical	8 170	0.17	3.5	0.1	40	-	-	-	8 220
Pulp and Paper	14 100	1	30	1	300	-	-	-	14 500
Cement	3 900	0.11	2.4	0.05	10	-	-	-	3 920
Other Manufacturing	20 900	0.43	9.1	0.4	100	-	-	-	21 000
Construction	1 850	0.03	0.65	0.05	20	-	-	-	1 870
Commercial & Institutional	25 500	0.49	10	0.5	200	-	-	-	25 700
Residential	40 900	100	2 000	2	500	-	-	-	43 500
Agriculture & Forestry	2 370	0.04	0.77	0.05	17	-	-	-	2 390
b. Transport²	140 000	30	700	20	6 000	-	-	-	147 000
Civil Aviation (Domestic Aviation)	7 050	0.5	10	0.2	70	-	-	-	7 100
Road Transportation	93 200	10	300	10	3 200	-	-	-	96 700
Light-Duty Gasoline Vehicles	43 400	7.7	160	6.2	1 900	-	-	-	45 500
Light-Duty Gasoline Trucks	19 200	3	64	3.2	990	-	-	-	20 300
Heavy-Duty Gasoline Vehicles	7 350	1.2	26	0.21	65	-	-	-	7 440
Motorcycles	148	0.15	3.1	0.0	0.96	-	-	-	152
Light-Duty Diesel Vehicles	458	0.01	0.3	0.03	10	-	-	-	469
Light-Duty Diesel Trucks	686	0.02	0.4	0.05	20	-	-	-	702
Heavy-Duty Diesel Vehicles	19 800	1	20	0.6	200	-	-	-	20 000
Propane & Natural Gas Vehicles	2 170	1	30	0.04	10	-	-	-	2 200
Railways	6 160	0.3	7	3	800	-	-	-	7 000
Navigation (Domestic Marine)	4 690	0.3	7	1	300	-	-	-	5 000
Other Transportation	28 400	20	300	6	2 000	-	-	-	31 000
Off-Road Gasoline	7 570	9	200	0.2	50	-	-	-	7 800
Off-Road Diesel	14 200	0.8	20	6	2 000	-	-	-	16 000
Pipelines	6 650	6.7	140	0.2	60	-	-	-	6 850
c. Fugitive Sources	11 000	1 500	31 000	0.1	30	-	-	-	42 000
Coal Mining	-	100	2 000	-	-	-	-	-	2 000
Oil and Natural Gas	11 000	1 400	29 000	0.1	30	-	-	-	40 000
Oil	95	190	4 100	0.1	30	-	-	-	4 200
Natural Gas	23	540	11 000	-	-	-	-	-	11 000
Venting	7 000	630	13 000	-	-	-	-	-	20 000
Flaring	4 400	2.6	54	0.0	0.4	-	-	-	4 400
INDUSTRIAL PROCESSES	33 200	4.7	99	37.9	11 700	770	6 500	3 400	55 700
a. Mineral Products	8 400	-	-	-	-	-	-	-	8 400
Cement Production	5 400	-	-	-	-	-	-	-	5 400
Lime Production	1 760	-	-	-	-	-	-	-	1 760
Mineral Product Use	1 200	-	-	-	-	-	-	-	1 200
b. Chemical Industry³	4 500	4.7	99	38	12 000	-	-	-	16 000
Ammonia Production	4 510	-	-	-	-	-	-	-	4 510
Nitric Acid Production	-	-	-	3.3	1 000	-	-	-	1 000
Adipic Acid Production	-	-	-	35	11 000	-	-	-	11 000
Petrochemical Production ⁴	-	4.7	99	0.03	8	-	-	-	110
c. Metal Production	12 900	-	-	-	-	-	6 540	3 170	22 600
Iron and Steel Production	10 200	-	-	-	-	-	-	-	10 200
Aluminum Production	2 710	-	-	-	-	-	6 540	59.1	9 310
SF ₆ Used in Magnesium Smelters and Casters	-	-	-	-	-	-	-	3 110	3 110
d. Production and Consumption of Halocarbons and SF₆⁵	-	-	-	-	-	770	-	230	990
e. Other & Undifferentiated Production	7 400	-	-	-	-	-	-	-	7 400
SOLVENT & OTHER PRODUCT USE	-	-	-	0.58	180	-	-	-	180
AGRICULTURE	-	900	19 000	90	30 000	-	-	-	47 000
a. Enteric Fermentation	-	770	16 000	-	-	-	-	-	16 000
b. Manure Management	-	120	2 600	10.2	3 160	-	-	-	5 700
c. Agriculture Soils	-	-	-	80	25 000	-	-	-	25 000
Direct Sources	-	-	-	45	14 000	-	-	-	14 000
Pasture, Range and Paddock Manure	-	-	-	7.1	2 200	-	-	-	2 200
Indirect Sources	-	-	-	30	9 000	-	-	-	9 000
d. Field Burning of Agricultural Residues	-	7	100	0.2	60	-	-	-	200
WASTE	510	850	18 000	2	700	-	-	-	19 000
a. Solid Waste Disposal on Land	-	830	17 000	-	-	-	-	-	17 000
b. Wastewater Handling	-	15	320	2	500	-	-	-	830
c. Waste Incineration	510	0.5	10	0.7	200	-	-	-	740
LAND USE, LAND-USE CHANGE AND FORESTRY	-77 000	180	3 700	7.1	2 200	-	-	-	-71 000
a. Forest Land	-100 000	140	2 900	5.8	1 800	-	-	-	-98 000
b. Cropland	12 000	10	300	0.6	200	-	-	-	12 000
c. Grassland	-	20	400	0.5	200	-	-	-	600
d. Wetlands	5 000	-	10	-	-	-	-	-	5 000
e. Settlements	9 000	5	90	0.2	50	-	-	-	9 000

Notes:

- National totals exclude all GHGs from the Land Use, Land-use Change and Forestry sector.
 - Emissions from ethanol and biodiesel are included in the Transport categories using gasoline and diesel respectively.
 - Emissions from the Ammonia Production, Nitric Acid Production and Petrochemical Production subcategories are included in Other & Undifferentiated Production within the provincial/territorial tables.
 - The category Petrochemical Production includes CH₄ and N₂O emissions. CO₂ emissions are included in Other & Undifferentiated Production.
 - HFC emissions occurring as a by-product of HCFC production (HCFC-22 exclusively) only occurred in Canada from 1990-1992. HFC consumption began in 1995.
- Indicates no emissions
0.0 Indicates emissions truncated due to rounding

Annex 13

Electricity in Canada: Summary and Intensity Tables

This annex presents detailed greenhouse gas (GHG) information related to the generation of electricity by the Public Electricity and Heat Production category (IPCC Category 1.A.1.a), on a national and provincial level.

The Canadian electricity generation industry is composed of utility, non-utility and industrial generators that produce electricity by transforming the energy in falling water, coal, natural gas, refined petroleum products (RPPs), miscellaneous other fuels, biomass, nuclear, wind and solar resources. The process of supplying electricity to the public involves not only power generation at the plant, but also distribution through the electricity grid. The efficiency of the transmission system has an impact on the amount of electricity available to consumers. GHG emission estimates and electricity generation values are therefore based on activities that occur at the generating plant, and efforts have been made to include the impact of the transmission and distribution infrastructure (including the sulphur hexafluoride [SF₆] emissions associated with switchgear and other electrical equipment, which is accounted for in the Industrial Processes Sector).

The analysis in this section relies on a variety of data sources. Fuel consumption and electricity production data are published by Statistics Canada in the Report on Energy Supply–Demand in Canada (RESD) (Statistics Canada #57-003-XIB), the Electric Power Generation, Transmission and Distribution (EPGTD) publication (Statistics Canada #57-202-XIB) and online via CANSIM (Tables 127-0006 and 127-0007).

Electricity generation intensity values were derived for each fuel type using GHG emission estimates and electricity generation data. The methodology used to develop the GHG emissions is discussed in Chapter 3 and Annex 2 of this report. GHG emissions are based on the total fuel consumed by the utility sector, as

provided in the RESD,^{1,2} while generation data are from CANSIM (2005–2012) and the EPGTD publication (1990–2004).

A “consumption intensity” indicator was also derived to reflect the GHG emissions intensity of electricity as it is delivered to the consumer, as opposed to deliveries to the electricity grid as in the case of the generation intensity indicator. Accordingly, electric energy losses in transmission and distribution are subtracted from overall total electricity generation, while SF₆ emissions associated with equipment used in electricity transmission and distribution are added to overall total GHG emissions. The electric energy losses in transmission and distribution are taken to be the utility sector’s share of “unallocated energy,” as presented in Table A13–1 to Table A13–13 and calculated from data provided by CANSIM 127-0008. Likewise, the SF₆ emissions values are based on the electric utility sector’s share of total SF₆ emissions from equipment used in electricity transmission and distribution³. The share in both cases is equal to utility electricity generation divided by the sum of total electricity generation, electricity imports and interprovincial receipts⁴.

Electricity intensity values for Canada, the provinces and the territories are provided in Table A13–1 to Table A13–13.

1 Recalculations have been carried out to improve the accuracy of fuel use data in the 1995–2003 time period, as discussed in Chapter 3 (Section 3.2.1.5). Consequently, GHG emissions and GHG intensity estimates for these years may be different from those found in last year’s inventory report (i.e. results for the year 2000).

2 Occasionally, Statistics Canada revises some of its historic data, which can affect the values provided in Table A13–1 to Table A13–13.

3 This reflects a new methodology and therefore affects estimates for all years in Table A13–1 to Table A13–13. Previously, SF₆ emissions from transmission and distribution were allocated entirely to the electric utility sector.

4 In previous years, the share was equal to utility electricity generation divided by total electricity generation.

Table A13-1 Electricity Generation and GHG Emission Details for Canada¹

	1990	2000	2005	2008	2009	2010	2011	2012 ²
Greenhouse Gas Emissions³								
<i>kt CO₂ eq</i>								
Combustion	93,600	130,000	123,000	114,000	99,100	101,000	93,600	88,200
Coal	79,700	107,000	96,400	91,900	77,000	77,900	67,900	62,700
Natural Gas	2,700	13,700	15,300	15,700	14,900	18,500	21,600	21,500
Other Fuels ⁴	11,200	9,330	11,200	6,910	7,200	4,690	4,080	4,020
Other Emissions ⁵	–	27	51	56	72	53	60	81
Overall Total^{6,7}	93,600	130,100	122,900	114,500	99,100	101,100	93,700	88,300
Electricity Generation^{8,9}								
<i>GWh</i>								
Combustion	101,000	146,000	140,000	127,000	113,000	117,000	119,000	106,000
Coal	82,200	106,000	93,900	87,700	73,600	74,300	70,200	58,500
Natural Gas	4,140	26,600	29,800	27,800	28,400	33,600	41,500	40,300
Other Fuels	14,800	13,400	16,700	11,500	11,000	8,650	7,170	7,190
Refined Petroleum Products	14,700	10,600	10,800	5,860	5,400	3,010	2,310	2,320
Biomass	14.4	1,830	1,780	1,810	2,080	2,310	2,150	2,040
Other	91	960	4,100	3,800	3,500	3,300	2,700	2,800
Steam from Waste Heat	–	–	32.4	4,600	5,520	7,090	6,440	7,530
Nuclear	68,800	68,700	86,800	90,600	85,000	85,500	88,300	89,500
Hydro	263,000	323,000	327,000	341,000	334,000	321,000	342,000	345,000
Other Renewables ¹⁰	26.2	264	1,580	3,760	6,610	8,780	10,370	11,600
Other Generation ¹¹	–	–	–	–	1,920	2,980	2,510	2,720
Overall Total⁷	433,000	539,000	556,000	567,000	546,000	542,000	568,000	562,000
Greenhouse Gas Intensity¹²								
<i>g GHG / kWh electricity generated</i>								
CO ₂ intensity (g CO ₂ / kWh)	210	240	220	200	180	190	160	160
CH ₄ intensity (g CH ₄ / kWh)	0.004	0.009	0.01	0.009	0.009	0.01	0.01	0.01
N ₂ O intensity (g N ₂ O / kWh)	0.004	0.004	0.004	0.004	0.004	0.004	0.003	0.003
Generation Intensity (g CO₂ eq / kWh)⁷	220	240	220	200	180	190	160	160
Unallocated Energy (GWh) ^{13,14}	31,000	42,000	37,000	36,000	57,000	52,000	57,000	47,000
SF ₆ Emissions (kt CO ₂ eq) ¹⁵	190	190	150	190	160	170	130	170
Consumption Intensity (g CO₂ eq / kWh)¹⁶	230	260	240	220	200	210	180	170

Notes:

1. Data presented include emissions, generation and intensity for facilities classified under NAICS code 22111 - Electric Power Generation.
 2. Preliminary data.
 3. Emissions based on data taken from the Report on Energy Supply-Demand in Canada, Catalogue No. 57-003-XIB, Statistics Canada.
 4. Includes GHG emissions from the combustion of refined petroleum products (light fuel oil, heavy fuel oil, and diesel), petroleum coke, still gas and other fuels not easily categorized.
 5. GHG emissions from on-site combustion of fuel not directly related to electricity generation.
 6. GHG emissions from the flooding of land for hydro dams are not included.
 7. Totals may not add up to overall total due to rounding.
 8. Taken from CANSIM Tables 127-0006 and 127-0007 (for 2005-2012).
 9. Taken from the Electric Power Generation, Transmission and Distribution (EPGTD) publication, Catalogue No. 57-202-XIB, Statistics Canada (for 1990-2004).
 10. Other Renewables - includes electricity generation by wind, tidal and solar.
 11. NAICS category 221119, Other Electric Power Generation.
 12. Intensity values have been rounded so as to present the estimated level of accuracy.
 13. Adapted from Statistics Canada CANSIM Table 127-0008 (2005-2012) or Cat. No. 57-202-XIB (1990-2004).
 14. Includes transmission line losses, metering differences and other losses.
 15. The electric utility sector's share of emissions from electrical equipment from CRF Category 2.F.viii (Production and Consumption of Halocarbons and SF₆).
 16. Consumption intensity values are impacted by unallocated energy and SF₆ transmission emissions.
- Indicates no emissions or no electricity generation
0 Indicates emissions or electricity generation value less than 0.1

Table A13–2 Electricity Generation and GHG Emission Details for Newfoundland and Labrador¹

	1990	2000	2005	2008	2009	2010	2011	2012 ²
Greenhouse Gas Emissions³								
<i>kt CO₂ equivalent</i>								
Combustion	1,630	815	856	898	821	739	857	843
Coal	–	–	–	–	–	–	–	–
Natural Gas	–	–	–	–	–	–	–	–
Other Fuels ⁴	1,630	815	856	898	821	739	857	843
Other Emissions ⁵	–	–	–	–	–	–	–	–
Overall Total^{6,7}	1,630	815	856	898	821	739	857	843
Electricity Generation^{8,9}								
<i>GWh</i>								
Combustion	2,090	1,020	1,360	1,130	1,060	916	1,009	970
Coal	–	–	–	–	–	–	–	–
Natural Gas	–	–	–	–	–	–	–	–
Other Fuels	2,090	1,020	1,360	1,130	1,060	916	1,009	970
Steam from Waste Heat	–	–	–	–	–	–	–	–
Nuclear	–	–	–	–	–	–	–	–
Hydro	34,300	41,800	38,900	41,000	35,900	39,400	39,100	41,300
Other Renewables ¹⁰	0	–	–	7.82	102	183	198	195
Other Generation ¹¹	–	–	–	–	–	–	–	–
Overall Total⁷	36,400	42,800	40,300	42,100	37,100	40,500	40,300	42,500
Greenhouse Gas Intensity¹²								
<i>g GHG / kWh electricity generated</i>								
CO ₂ intensity (g CO ₂ / kWh)	44	19	21	21	22	18	21	20
CH ₄ intensity (g CH ₄ / kWh)	0.0006	0.0002	0.0003	0.0003	0.0003	0.0003	0.0004	0.0003
N ₂ O intensity (g N ₂ O / kWh)	0.001	0.0005	0.001	0.001	0.001	0.001	0.001	0.001
Generation Intensity (g CO₂ eq / kWh)⁷	45	19	21	21	22	18	21	20
Unallocated Energy (GWh) ^{13,14}	990	1300	810	1100	1100	1300	1300	1300
SF ₆ Emissions (kt CO ₂ eq) ¹⁵	0.95	0.95	0.50	1.2	0.64	0.55	0.84	1.0
Consumption Intensity (g CO₂ eq / kWh)¹⁶	46	20	22	22	23	19	22	20

Notes:

- Data presented include emissions, generation and intensity for facilities classified under NAICS code 22111 - Electric Power Generation.
- Preliminary data.
- Emissions based on data taken from the Report on Energy Supply-Demand in Canada, Catalogue No. 57-003-XIB, Statistics Canada.
- Includes GHG emissions from the combustion of refined petroleum products (light fuel oil, heavy fuel oil, and diesel), petroleum coke, still gas and other fuels not easily categorized.
- GHG emissions from on-site combustion of fuel not directly related to electricity generation.
- GHG emissions from the flooding of land for hydro dams are not included.
- Totals may not add up to overall total due to rounding.
- Taken from CANSIM Tables 127-0006 and 127-0007 (for 2005-2012).
- Taken from the Electric Power Generation, Transmission and Distribution (EPGTD) publication, Catalogue No. 57-202-XIB, Statistics Canada (for 1990-2004).
- Other Renewables - includes electricity generation by wind, tidal and solar.
- NAICS category 221119, Other Electric Power Generation.
- Intensity values have been rounded so as to present the estimated level of accuracy.
- Adapted from Statistics Canada CANSIM Table 127-0008 (2005-2012) or Cat. No. 57-202-XIB (1990-2004).
- Includes transmission line losses, metering differences and other losses.
- The electric utility sector's share of emissions from electrical equipment from CRF Category 2.F.viii (Production and Consumption of Halocarbons and SF₆).
- Consumption intensity values are impacted by unallocated energy and SF₆ transmission emissions.
- Indicates no emissions or no electricity generation
- 0 Indicates emissions or electricity generation value less than 0.1

Table A13-3 Electricity Generation and GHG Emission Details for Prince Edward Island¹

	1990	2000	2005	2008	2009	2010	2011	2012 ²
Greenhouse Gas Emissions³								
<i>kt CO₂ equivalent</i>								
Combustion	103	52.5	4.72	4.09	5.97	1.57	1.22	10.7
Coal	-	-	-	-	-	-	-	-
Natural Gas	-	-	-	-	-	-	-	-
Other Fuels ⁴	103	52.5	4.72	4.09	5.97	1.57	1.22	10.7
Other Emissions ⁵	-	-	-	-	-	-	-	-
Overall Total^{6,7}	103	52.5	4.72	4.09	5.97	1.57	1.22	10.7
Electricity Generation^{8,9}								
<i>GWh</i>								
Combustion	81.1	48.1	6.31	5.77	7.32	3.78	4.81	14.5
Coal	-	-	-	-	-	-	-	-
Natural Gas	-	-	-	-	-	-	-	-
Other Fuels	81.1	48.1	6.31	5.77	7.32	3.78	4.81	14.5
Steam from Waste Heat	-	-	-	-	-	-	-	-
Nuclear	-	-	-	-	-	-	-	-
Hydro	-	-	-	-	-	-	-	-
Other Renewables ¹⁰	-	-	40.1	142	347	458	488	468
Other Generation ¹¹	-	-	-	-	-	-	-	-
Overall Total⁷	81.1	48.1	46.4	147	355	461	492	482
Greenhouse Gas Intensity¹²								
<i>g GHG / kWh electricity generated</i>								
CO ₂ intensity (g CO ₂ / kWh)	1,300	1,100	100	28	17	3.4	2.5	22
CH ₄ intensity (g CH ₄ / kWh)	0.02	0.01	0.001	0.0003	0.0002	0.00004	0.00006	0.0005
N ₂ O intensity (g N ₂ O / kWh)	0.03	0.02	0.002	0.001	0.0003	0.0001	0.0001	0.0004
Generation Intensity (g CO₂ eq / kWh)⁷	1 300	1 100	100	28	17	3.4	2.5	22
Unallocated Energy (GWh) ^{13,14}	unk	unk	unk	8.6	22	8.6	21	20
SF ₆ Emissions (kt CO ₂ eq) ¹⁵	0	0	-	-	-	-	0	0
Consumption Intensity (g CO₂ eq / kWh)¹⁶	*	*	*	*	*	*	*	*

Notes:

- Data presented include emissions, generation and intensity for facilities classified under NAICS code 22111 - Electric Power Generation.
- Preliminary data.
- Emissions based on data taken from the Report on Energy Supply-Demand in Canada, Catalogue No. 57-003-XIB, Statistics Canada.
- Includes GHG emissions from the combustion of refined petroleum products (light fuel oil, heavy fuel oil, and diesel), petroleum coke, still gas and other fuels not easily categorized.
- GHG emissions from on-site combustion of fuel not directly related to electricity generation.
- GHG emissions from the flooding of land for hydro dams are not included.
- Totals may not add up to overall total due to rounding.
- Taken from CANSIM Tables 127-0006 and 127-0007 (for 2005-2012).
- Taken from the Electric Power Generation, Transmission and Distribution (EPGTD) publication, Catalogue No. 57-202-XIB, Statistics Canada (for 1990-2004).
- Other Renewables - includes electricity generation by wind, tidal and solar.
- NAICS category 221119, Other Electric Power Generation.
- Intensity values have been rounded so as to present the estimated level of accuracy.
- Adapted from Statistics Canada CANSIM Table 127-0008 (2005-2012) or Cat. No. 57-202-XIB (1990-2004).
- Includes transmission line losses, metering differences and other losses.
- The electric utility sector's share of emissions from electrical equipment from CRF Category 2.F.viii (Production and Consumption of Halocarbons and SF₆).
- Consumption intensity values are impacted by unallocated energy and SF₆ transmission emissions.
 - Indicates no emissions or no electricity generation
 - 0 Indicates emissions or electricity generation value less than 0.1
 - unk Indicates unknown as appropriate data were unavailable
 - * Due to the high level of imports from New Brunswick, values for New Brunswick are more indicative of GHG consumption intensity.

Table A13–4 Electricity Generation and GHG Emission Details for Nova Scotia¹

	1990	2000	2005	2008	2009	2010	2011	2012 ²
Greenhouse Gas Emissions³								
<i>kt CO₂ equivalent</i>								
Combustion	6 870	9 440	10 700	9 420	9 360	8 790	8 450	7 630
Coal	x	8 170	5 420	6 890	6 690	6 350	6 100	5 120
Natural Gas	–	–	x	x	x	x	x	x
Other Fuels ⁴	x	1 270	x	x	x	x	x	x
Other Emissions ⁵	–	–	–	–	–	–	–	–
Overall Total^{6,7}	6 870	9 440	10 700	9 420	9 360	8 790	8 450	7 630
Electricity Generation^{8,9}								
<i>GWh</i>								
Combustion	8 440	10 500	11 100	10 800	10 200	10 300	9 500	9 210
Coal	6 020	8 850	6 770	7 790	6 960	6 790	6 020	5 390
Natural Gas	–	–	181	1 260	1 610	2 270	2 430	2 260
Other Fuels	2 430	1 610	4 110	1 700	1 660	1 270	1 050	1 560
Steam from Waste Heat	–	–	–	–	–	–	–	–
Nuclear	–	–	–	–	–	–	–	–
Hydro	1 120	887	1 040	1 060	1 040	969	1 070	806
Other Renewables ¹⁰	26.1	0	113	164	184	414	809	827
Other Generation ¹¹	–	–	–	–	–	–	–	–
Overall Total⁷	9 590	11 300	12 200	12 000	11 500	11 700	11 400	10 800
Greenhouse Gas Intensity¹²								
<i>g GHG / kWh electricity generated</i>								
CO ₂ intensity (g CO ₂ / kWh)	710	830	870	780	810	750	740	700
CH ₄ intensity (g CH ₄ / kWh)	0.007	0.008	0.02	0.02	0.03	0.04	0.04	0.04
N ₂ O intensity (g N ₂ O / kWh)	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Generation Intensity (g CO₂ eq / kWh)⁷	720	830	870	790	820	750	740	700
Unallocated Energy (GWh) ^{13,14}	580	830	770	710	710	670	640	1 200
SF ₆ Emissions (kt CO ₂ eq) ¹⁵	23	23	30	23	16	27	32	22
Consumption Intensity (g CO₂ eq / kWh)¹⁶	770	900	940	840	870	800	790	790

Notes:

1. Data presented include emissions, generation and intensity for facilities classified under NAICS code 22111 - Electric Power Generation.
2. Preliminary data.
3. Emissions based on data taken from the Report on Energy Supply-Demand in Canada, Catalogue No. 57-003-XIB, Statistics Canada.
4. Includes GHG emissions from the combustion of refined petroleum products (light fuel oil, heavy fuel oil, and diesel), petroleum coke, still gas and other fuels not easily categorized.
5. GHG emissions from on-site combustion of fuel not directly related to electricity generation.
6. GHG emissions from the flooding of land for hydro dams are not included.
7. Totals may not add up to overall total due to rounding.
8. Taken from CANSIM Tables 127-0006 and 127-0007 (for 2005-2012).
9. Taken from the Electric Power Generation, Transmission and Distribution (EPGTD) publication, Catalogue No. 57-202-XIB, Statistics Canada (for 1990-2004).
10. Other Renewables - includes electricity generation by wind, tidal and solar.
11. NAICS category 221119, Other Electric Power Generation.
12. Intensity values have been rounded so as to present the estimated level of accuracy.
13. Adapted from Statistics Canada CANSIM Table 127-0008 (2005-2012) or Cat. No. 57-202-XIB (1990-2004).
14. Includes transmission line losses, metering differences and other losses.
15. The electric utility sector's share of emissions from electrical equipment from CRF Category 2.F.viii (Production and Consumption of Halocarbons and SF₆).
16. Consumption intensity values are impacted by unallocated energy and SF₆ transmission emissions.
 - Indicates no emissions or no electricity generation
 - 0 Indicates emissions or electricity generation value less than 0.1
 - x Indicates data not shown due to statistical limitations

Table A13–5 Electricity Generation and GHG Emission Details for New Brunswick¹

	1990	2000	2005	2008	2009	2010	2011	2012 ²
Greenhouse Gas Emissions³								
<i>kt CO₂ equivalent</i>								
Combustion	5 970	8 920	8 020	7 070	7 030	5 320	4 910	4 050
Coal	1 170	3 140	2 910	2 710	2 310	2 090	x	x
Natural Gas	–	–	x	x	x	x	x	x
Other Fuels ⁴	4 790	5 780	x	x	x	x	1 610	1 330
Other Emissions ⁵	–	–	–	–	–	–	–	–
Overall Total^{6,7}	5 970	8 920	8 020	7 070	7 030	5 320	4 910	4 050
Electricity Generation^{8,9}								
<i>GWh</i>								
Combustion	7 630	11 000	12 100	8 520	8 660	6 220	6 040	5 160
Coal	1 270	3 820	2 920	2 880	2 770	2 080	2 340	1 900
Natural Gas	–	–	1 970	1 410	1 840	1 840	1 960	1 780
Other Fuels	6 360	7 210	7 210	4 230	4 050	2 300	1 740	1 490
Steam from Waste Heat	–	–	–	414	617	681	666	551
Nuclear	5 340	3 960	4 380	1 130	–	–	–	414
Hydro	3 460	3 220	3 820	3 540	2 970	3 330	3 840	2 860
Other Renewables ¹⁰	–	–	–	–	270	389	693	733
Other Generation ¹¹	–	–	–	–	–	–	–	–
Overall Total⁷	16 400	18 200	20 300	13 600	12 500	10 600	11 200	9 700
Greenhouse Gas Intensity¹²								
<i>g GHG / kWh electricity generated</i>								
CO ₂ intensity (g CO ₂ / kWh)	360	490	390	520	560	500	430	410
CH ₄ intensity (g CH ₄ / kWh)	0.004	0.005	0.01	0.02	0.03	0.03	0.03	0.03
N ₂ O intensity (g N ₂ O / kWh)	0.007	0.009	0.007	0.009	0.009	0.008	0.007	0.007
Generation Intensity (g CO₂ eq / kWh)⁷	360	490	400	520	560	500	440	420
Unallocated Energy (GWh) ^{13,14}	990	1 300	1 100	250	530	390	160	unk
SF ₆ Emissions (kt CO ₂ eq) ¹⁵	0.66	0.65	–	0.61	0.37	0.23	0.43	0.33
Consumption Intensity (g CO₂ eq / kWh)¹⁶	390	530	420	530	590	520	440	unk

Notes:

- Data presented include emissions, generation and intensity for facilities classified under NAICS code 22111 - Electric Power Generation.
- Preliminary data.
- Emissions based on data taken from the Report on Energy Supply-Demand in Canada, Catalogue No. 57-003-XIB, Statistics Canada.
- Includes GHG emissions from the combustion of refined petroleum products (light fuel oil, heavy fuel oil, and diesel), petroleum coke, still gas and other fuels not easily categorized.
- GHG emissions from on-site combustion of fuel not directly related to electricity generation.
- GHG emissions from the flooding of land for hydro dams are not included.
- Totals may not add up to overall total due to rounding.
- Taken from CANSIM Tables 127-0006 and 127-0007 (for 2005-2012).
- Taken from the Electric Power Generation, Transmission and Distribution (EPGTD) publication, Catalogue No. 57-202-XIB, Statistics Canada (for 1990-2004).
- Other Renewables - includes electricity generation by wind, tidal and solar.
- NAICS category 221119, Other Electric Power Generation.
- Intensity values have been rounded so as to present the estimated level of accuracy.
- Adapted from Statistics Canada CANSIM Table 127-0008 (2005-2012) or Cat. No. 57-202-XIB (1990-2004).
- Includes transmission line losses, metering differences and other losses.
- The electric utility sector's share of emissions from electrical equipment from CRF Category 2.F.viii (Production and Consumption of Halocarbons and SF₆).
- Consumption intensity values are impacted by unallocated energy and SF₆ transmission emissions.
- Indicates no emissions or no electricity generation
- 0 Indicates emissions or electricity generation value less than 0.1
- x Indicates data not shown due to statistical limitations
- unk Indicates unknown as appropriate data were unavailable

Table A13–6 Electricity Generation and GHG Emission Details for Quebec¹

	1990	2000	2005	2008	2009	2010	2011	2012 ²
Greenhouse Gas Emissions³								
<i>kt CO₂ equivalent</i>								
Combustion	1 480	560	596	431	633	427	401	520
Coal	–	–	–	–	–	–	–	–
Natural Gas	x	x	x	x	x	x	x	x
Other Fuels ⁴	x	x	x	x	x	x	x	x
Other Emissions ⁵	–	2.4	4.6	–	–	–	–	–
Overall Total^{6,7}	1 480	562	601	431	633	427	401	520
Electricity Generation^{8,9}								
<i>GWh</i>								
Combustion	1 980	1 150	1 390	1 100	1 690	1 510	1 360	1 260
Coal	–	–	–	–	–	–	–	–
Natural Gas	–	191	212	211	211	200	198	191
Other Fuels	1 980	961	1 170	894	1 480	1 310	1 170	1 070
Steam from Waste Heat	–	–	–	–	–	–	–	–
Nuclear	4 070	4 890	4 480	3 620	3 600	3 550	3 530	4 210
Hydro	112 000	153 000	155 000	167 000	170 000	161 000	170 000	171 000
Other Renewables ¹⁰	–	173	416	565	1 320	1 550	1 000	1 011
Other Generation ¹¹	–	–	–	–	–	–	–	–
Overall Total⁷	118 000	160 000	161 000	172 000	177 000	168 000	176 000	178 000
Greenhouse Gas Intensity¹²								
<i>g GHG / kWh electricity generated</i>								
CO ₂ intensity (g CO ₂ / kWh)	12	3.5	3.7	2.5	3.5	2.5	2.2	2.9
CH ₄ intensity (g CH ₄ / kWh)	0.0004	0.0004	0.0005	0.0003	0.0004	0.0004	0.0002	0.0005
N ₂ O intensity (g N ₂ O / kWh)	0.0003	0.0001	0.0002	0.0001	0.0001	0.0001	0.0001	0.0001
Generation Intensity (g CO₂ eq / kWh)⁷	13	3.5	3.7	2.5	3.6	2.5	2.3	2.9
Unallocated Energy (GWh) ^{13,14}	7 300	13 000	9 100	9 200	11 000	13 000	11 000	12 000
SF ₆ Emissions (kt CO ₂ eq) ¹⁵	28	28	23	37	28	24	24	38
Consumption Intensity (g CO₂ eq / kWh)¹⁶	14	4.0	4.1	2.9	4.0	2.9	2.6	3.4

Notes:

1. Data presented include emissions, generation and intensity for facilities classified under NAICS code 22111 - Electric Power Generation.
 2. Preliminary data.
 3. Emissions based on data taken from the Report on Energy Supply-Demand in Canada, Catalogue No. 57-003-XIB, Statistics Canada.
 4. Includes GHG emissions from the combustion of refined petroleum products (light fuel oil, heavy fuel oil, and diesel), petroleum coke, still gas and other fuels not easily categorized.
 5. GHG emissions from on-site combustion of fuel not directly related to electricity generation.
 6. GHG emissions from the flooding of land for hydro dams are not included.
 7. Totals may not add up to overall total due to rounding.
 8. Taken from CANSIM Tables 127-0006 and 127-0007 (for 2005-2012).
 9. Taken from the Electric Power Generation, Transmission and Distribution (EPGTD) publication, Catalogue No. 57-202-XIB, Statistics Canada (for 1990-2004).
 10. Other Renewables - includes electricity generation by wind, tidal and solar.
 11. NAICS category 221119, Other Electric Power Generation.
 12. Intensity values have been rounded so as to present the estimated level of accuracy.
 13. Adapted from Statistics Canada CANSIM Table 127-0008 (2005-2012) or Cat. No. 57-202-XIB (1990-2004).
 14. Includes transmission line losses, metering differences and other losses.
 15. The electric utility sector's share of emissions from electrical equipment from CRF Category 2.F.viii (Production and Consumption of Halocarbons and SF₆).
 16. Consumption intensity values are impacted by unallocated energy and SF₆ transmission emissions.
- Indicates no emissions or no electricity generation
0 Indicates emissions or electricity generation value less than 0.1
x Indicates data not shown due to statistical limitations

Table A13-7 Electricity Generation and GHG Emission Details for Ontario¹

	1990	2000	2005	2008	2009	2010	2011	2012 ²
Greenhouse Gas Emissions³								
<i>kt CO₂ equivalent</i>								
Combustion	25 500	43 000	34 100	27 100	14 800	19 600	14 100	14 500
Coal	24 400	37 600	27 800	22 000	9 640	12 100	4 100	4 220
Natural Gas	x	x	x	x	x	x	x	x
Other Fuels ⁴	x	x	x	x	x	x	x	x
Other Emissions ⁵	-	0.76	1.4	1.4	21	0.23	0.23	-
Overall Total^{6,7}	25 500	43 000	34 100	27 100	14 800	19 600	14 100	14 500
Electricity Generation^{8,9}								
<i>GWh</i>								
Combustion	29 200	52 200	40 900	33 800	19 600	27 200	25 100	24 800
Coal	27 800	40 800	29 400	22 700	9 570	12 300	3 900	4 100
Natural Gas	3.18	10 200	10 000	9 240	9 120	14 100	20 400	19 900
Other Fuels	1 430	1 140	1 440	1 830	947	864	782	751
Steam from Waste Heat	-	-	-	1 440	2 580	3 630	3 500	4 260
Nuclear	59 400	59 800	78 000	85 800	81 400	82 000	84 800	84 900
Hydro	38 700	36 600	34 600	38 700	38 700	31 800	34 600	33 100
Other Renewables ¹⁰	-	1.22	26.0	958	2 100	3 190	3 420	4 340
Other Generation ¹¹	-	-	-	-	-	-	-	-
Overall Total⁷	127 000	149 000	153 000	161 000	144 000	148 000	151 000	151 000
Greenhouse Gas Intensity¹²								
<i>g GHG / kWh electricity generated</i>								
CO ₂ intensity (g CO ₂ / kWh)	200	290	220	170	100	130	92	95
CH ₄ intensity (g CH ₄ / kWh)	0.002	0.01	0.01	0.009	0.009	0.01	0.02	0.02
N ₂ O intensity (g N ₂ O / kWh)	0.003	0.004	0.004	0.003	0.002	0.003	0.002	0.002
Generation Intensity (g CO₂ eq / kWh)⁷	200	290	220	170	100	130	93	96
Unallocated Energy (GWh) ^{13,14}	10 000	12 000	12 000	1 500	21 000	15 000	16 000	16 000
SF ₆ Emissions (kt CO ₂ eq) ¹⁵	74	73	47	59	58	58	38	56
Consumption Intensity (g CO₂ eq / kWh)¹⁶	220	320	240	170	120	150	100	110

Notes:

1. Data presented include emissions, generation and intensity for facilities classified under NAICS code 22111 - Electric Power Generation.
2. Preliminary data.
3. Emissions based on data taken from the Report on Energy Supply-Demand in Canada, Catalogue No. 57-003-XIB, Statistics Canada.
4. Includes GHG emissions from the combustion of refined petroleum products (light fuel oil, heavy fuel oil, and diesel), petroleum coke, still gas and other fuels not easily categorized.
5. GHG emissions from on-site combustion of fuel not directly related to electricity generation.
6. GHG emissions from the flooding of land for hydro dams are not included.
7. Totals may not add up to overall total due to rounding.
8. Taken from CANSIM Tables 127-0006 and 127-0007 (for 2005-2012).
9. Taken from the Electric Power Generation, Transmission and Distribution (EPGTD) publication, Catalogue No. 57-202-XIB, Statistics Canada (for 1990-2004).
10. Other Renewables - includes electricity generation by wind, tidal and solar.
11. NAICS category 221119, Other Electric Power Generation.
12. Intensity values have been rounded so as to present the estimated level of accuracy.
13. Adapted from Statistics Canada CANSIM Table 127-0008 (2005-2012) or Cat. No. 57-202-XIB (1990-2004).
14. Includes transmission line losses, metering differences and other losses.
15. The electric utility sector's share of emissions from electrical equipment from CRF Category 2.F.viii (Production and Consumption of Halocarbons and SF₆).
16. Consumption intensity values are impacted by unallocated energy and SF₆ transmission emissions.
 - Indicates no emissions or no electricity generation
 - 0 Indicates emissions or electricity generation value less than 0.1
 - x Indicates data not shown due to statistical limitations

Table A13–8 Electricity Generation and GHG Emission Details for Manitoba¹

	1990	2000	2005	2008	2009	2010	2011	2012 ²
Greenhouse Gas Emissions³								
<i>kt CO₂ equivalent</i>								
Combustion	517	994	326	403	179	74.9	106	91.5
Coal	x	x	x	x	x	x	x	x
Natural Gas	x	x	x	x	x	x	x	x
Other Fuels ⁴	50.5	12.1	15.6	11.2	11.2	11.4	12.8	12.8
Other Emissions ⁵	–	4.7	8.7	11	11	12	12	20
Overall Total^{6,7}	517	999	334	414	190	87	118	112
Electricity Generation^{8,9}								
<i>GWh</i>								
Combustion	399	881	447	423	195	84	106	94
Coal	375	869	421	387	140	44.4	49.7	51.5
Natural Gas	0.904	–	10.6	20.6	39.4	22.9	41.1	27.4
Other Fuels	22.4	12.4	15.1	15.3	14.9	17.0	15.3	15.2
Steam from Waste Heat	–	–	–	–	–	–	–	–
Nuclear	–	–	–	–	–	–	–	–
Hydro	19 800	31 500	36 400	34 600	33 500	33 300	34 200	32 200
Other Renewables ¹⁰	–	–	53.4	412	365	343	747	877
Other Generation ¹¹	–	–	–	–	–	–	–	–
Overall Total⁷	20 200	32 400	36 900	35 400	34 100	33 700	35 100	33 200
Greenhouse Gas Intensity¹²								
<i>g GHG / kWh electricity generated</i>								
CO ₂ intensity (g CO ₂ / kWh)	25	31	9.0	12	5.5	2.5	3.3	3.3
CH ₄ intensity (g CH ₄ / kWh)	0.0005	0.0004	0.0002	0.0002	0.0002	0.0001	0.0004	0.0002
N ₂ O intensity (g N ₂ O / kWh)	0.001	0.001	0.0002	0.0003	0.0001	0.0001	0.0001	0.0001
Generation Intensity (g CO₂ eq / kWh)⁷	26	31	9.1	12	5.6	2.6	3.4	3.4
Unallocated Energy (GWh) ^{13,14}	2 100	3 750	1 900	4 700	4 700	4 600	4 600	4 500
SF ₆ Emissions (kt CO ₂ eq) ¹⁵	4.2	4.3	4.1	3.4	3.1	4.5	6.2	1.4
Consumption Intensity (g CO₂ eq / kWh)¹⁶	29	35	9.7	14	6.6	3.1	4.1	4.0

Notes:

1. Data presented include emissions, generation and intensity for facilities classified under NAICS code 22111 - Electric Power Generation.
2. Preliminary data.
3. Emissions based on data taken from the Report on Energy Supply-Demand in Canada, Catalogue No. 57-003-XIB, Statistics Canada.
4. Includes GHG emissions from the combustion of refined petroleum products (light fuel oil, heavy fuel oil, and diesel), petroleum coke, still gas and other fuels not easily categorized.
5. GHG emissions from on-site combustion of fuel not directly related to electricity generation.
6. GHG emissions from the flooding of land for hydro dams are not included.
7. Totals may not add up to overall total due to rounding.
8. Taken from CANSIM Tables 127-0006 and 127-0007 (for 2005-2012).
9. Taken from the Electric Power Generation, Transmission and Distribution (EPGTD) publication, Catalogue No. 57-202-XIB, Statistics Canada (for 1990-2004).
10. Other Renewables - includes electricity generation by wind, tidal and solar.
11. NAICS category 221119, Other Electric Power Generation.
12. Intensity values have been rounded so as to present the estimated level of accuracy.
13. Adapted from Statistics Canada CANSIM Table 127-0008 (2005-2012) or Cat. No. 57-202-XIB (1990-2004).
14. Includes transmission line losses, metering differences and other losses.
15. The electric utility sector's share of emissions from electrical equipment from CRF Category 2.F.viii (Production and Consumption of Halocarbons and SF₆).
16. Consumption intensity values are impacted by unallocated energy and SF₆ transmission emissions.

- Indicates no emissions or no electricity generation
- 0 Indicates emissions or electricity generation value less than 0.1
- x Indicates data not shown due to statistical limitations

Table A13–9 Electricity Generation and GHG Emission Details for Saskatchewan¹

	1990	2000	2005	2008	2009	2010	2011	2012 ²
Greenhouse Gas Emissions³								
<i>kt CO₂ equivalent</i>								
Combustion	11 100	14 400	15 200	15 200	16 300	16 100	15 500	15 800
Coal	x	x	x	x	x	x	x	x
Natural Gas	x	x	x	x	x	x	x	x
Other Fuels ⁴	6.71	10.8	4.46	0.558	0.837	0.280	7.12	6.58
Other Emissions ⁵	–	10	17	23	29	30	29	31
Overall Total^{6,7}	11 100	14 400	15 200	15 200	16 300	16 100	15 500	15 800
Electricity Generation^{8,9}								
<i>GWh</i>								
Combustion	9 660	14 100	14 800	16 200	16 700	15 100	14 900	15 200
Coal	9 340	11 400	12 200	12 200	13 100	12 100	11 600	11 400
Natural Gas	308	2 660	2 610	4 000	3 570	3 040	3 260	3 800
Other Fuels	8.78	12.5	12.0	18.6	15.3	17.7	10.0	9.30
Steam from Waste Heat	–	–	–	630	360	628	685	815
Nuclear	–	–	–	–	–	–	–	–
Hydro	4 210	3 050	4 570	4 030	2 960	3 870	4 640	4 240
Other Renewables ¹⁰	–	–	91.9	574	579	507	608	655
Other Generation ¹¹	–	–	–	–	–	–	–	–
Overall Total⁷	13 900	17 100	19 500	21 500	20 600	20 100	20 800	21 000
Greenhouse Gas Intensity¹²								
<i>g GHG / kWh electricity generated</i>								
CO ₂ intensity (g CO ₂ / kWh)	790	840	770	700	790	790	740	750
CH ₄ intensity (g CH ₄ / kWh)	0.02	0.03	0.03	0.03	0.03	0.04	0.03	0.04
N ₂ O intensity (g N ₂ O / kWh)	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Generation Intensity (g CO₂ eq / kWh)⁷	800	840	780	710	790	800	750	750
Unallocated Energy (GWh) ^{13,14}	1 300	1 700	1 400	3 200	2 700	1 300	1 100	1 200
SF ₆ Emissions (kt CO ₂ eq) ¹⁵	1.7	1.6	1.2	0.78	0.59	1.3	1.2	0.76
Consumption Intensity (g CO₂ eq / kWh)¹⁶	880	940	840	830	910	860	790	800

Notes:

1. Data presented include emissions, generation and intensity for facilities classified under NAICS code 22111 - Electric Power Generation.
2. Preliminary data.
3. Emissions based on data taken from the Report on Energy Supply-Demand in Canada, Catalogue No. 57-003-XIB, Statistics Canada.
4. Includes GHG emissions from the combustion of refined petroleum products (light fuel oil, heavy fuel oil, and diesel), petroleum coke, still gas and other fuels not easily categorized.
5. GHG emissions from on-site combustion of fuel not directly related to electricity generation.
6. GHG emissions from the flooding of land for hydro dams are not included.
7. Totals may not add up to overall total due to rounding.
8. Taken from CANSIM Tables 127-0006 and 127-0007 (for 2005-2012).
9. Taken from the Electric Power Generation, Transmission and Distribution (EPGTD) publication, Catalogue No. 57-202-XIB, Statistics Canada (for 1990-2004).
10. Other Renewables - includes electricity generation by wind, tidal and solar.
11. NAICS category 221119, Other Electric Power Generation.
12. Intensity values have been rounded so as to present the estimated level of accuracy.
13. Adapted from Statistics Canada CANSIM Table 127-0008 (2005-2012) or Cat. No. 57-202-XIB (1990-2004).
14. Includes transmission line losses, metering differences and other losses.
15. The electric utility sector's share of eEmissions from electrical equipment from CRF Category 2.F.viii (Production and Consumption of Halocarbons and SF₆).
16. Consumption intensity values are impacted by unallocated energy and SF₆ transmission emissions.

- Indicates no emissions or no electricity generation
- 0 Indicates emissions or electricity generation value less than 0.1
- x Indicates data not shown due to statistical limitations

Table A13–10 Electricity Generation and GHG Emission Details for Alberta¹

	1990	2000	2005	2008	2009	2010	2011	2012 ²
Greenhouse Gas Emissions³								
<i>kt CO₂ equivalent</i>								
Combustion	39 400	49 800	51 500	52 200	48 400	48 600	48 300	44 100
Coal	x	x	x	x	x	x	x	x
Natural Gas	x	x	x	x	x	x	x	x
Other Fuels ⁴	11.8	300	60.2	10.9	11.7	12.8	12.3	11.4
Other Emissions ⁵	–	5.6	10	8.0	5.0	5.5	12	23
Overall Total^{6,7}	39 400	49 800	51 500	52 200	48 400	48 600	48 400	44 200
Electricity Generation^{8,9}								
<i>GWh</i>								
Combustion	39 900	51 300	54 200	51 300	51 500	51 700	58 800	47 400
Coal	37 300	40 700	42 200	41 700	41 000	41 000	46 300	35 600
Natural Gas	2 510	10 200	11 600	9 280	9 970	10 200	12 100	11 300
Other Fuels	21.6	443	424	364	548	501	494	595
Steam from Waste Heat	–	–	32.4	1 350	1 310	1 500	1 550	1 880
Nuclear	–	–	–	–	–	–	–	–
Hydro	2 060	1 760	2 240	1 980	1 620	1 480	1 970	2 570
Other Renewables ¹⁰	–	88.9	837	942	1 340	1 630	2 220	2 290
Other Generation ¹¹	–	–	–	–	–	–	–	–
Overall Total⁷	41 900	53 200	57 300	55 600	55 800	56 400	64 600	54 200
Greenhouse Gas Intensity¹²								
<i>g GHG / kWh electricity generated</i>								
CO ₂ intensity (g CO ₂ / kWh)	930	930	890	930	860	860	740	810
CH ₄ intensity (g CH ₄ / kWh)	0.02	0.04	0.03	0.04	0.03	0.03	0.03	0.04
N ₂ O intensity (g N ₂ O / kWh)	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.02
Generation Intensity (g CO₂ eq / kWh)⁷	940	940	900	940	870	860	750	820
Unallocated Energy (GWh) ^{13,14}	3 400	4 100	4 900	11 900	10 800	9 800	16 500	5 900
SF ₆ Emissions (kt CO ₂ eq) ¹⁵	1.5	1.5	0.39	2.1	1.7	0.82	0.91	2.4
Consumption Intensity (g CO₂ eq / kWh)¹⁶	1 000	1 000	980	1 200	1 100	1 000	1 000	910

Notes:

1. Data presented include emissions, generation and intensity for facilities classified under NAICS code 22111 - Electric Power Generation.
2. Preliminary data.
3. Emissions based on data taken from the Report on Energy Supply-Demand in Canada, Catalogue No. 57-003-XIB, Statistics Canada.
4. Includes GHG emissions from the combustion of refined petroleum products (light fuel oil, heavy fuel oil, and diesel), petroleum coke, still gas and other fuels not easily categorized.
5. GHG emissions from on-site combustion of fuel not directly related to electricity generation.
6. GHG emissions from the flooding of land for hydro dams are not included.
7. Totals may not add up to overall total due to rounding.
8. Taken from CANSIM Tables 127-0006 and 127-0007 (for 2005–2012).
9. Taken from the Electric Power Generation, Transmission and Distribution (EPGTD) publication, Catalogue No. 57-202-XIB, Statistics Canada (for 1990–2004).
10. Other Renewables - includes electricity generation by wind, tidal and solar.
1011. NAICS category 221119, Other Electric Power Generation.
12. Intensity values have been rounded so as to present the estimated level of accuracy.
13. Adapted from Statistics Canada CANSIM Table 127-0008 (2005–2012) or Cat. No. 57-202-XIB (1990–2004).
14. Includes transmission line losses, metering differences and other losses.
15. The electric utility sector's share of emissions from electrical equipment from CRF Category 2.F.viii (Production and Consumption of Halocarbons and SF₆).
16. Consumption intensity values are impacted by unallocated energy and SF₆ transmission emissions.
 - Indicates no emissions or no electricity generation
 - 0 Indicates emissions or electricity generation value less than 0.1
 - x Indicates data not shown due to statistical limitations

Table A13–11 Electricity Generation and GHG Emission Details for British Columbia¹

	1990	2000	2005	2008	2009	2010	2011	2012 ²
Greenhouse Gas Emissions³								
<i>kt CO₂ equivalent</i>								
Combustion	803	1 920	1 310	1 460	1 310	1 210	754	487
Coal	–	–	–	–	–	–	–	–
Natural Gas	x	x	x	x	x	x	x	x
Other Fuels ⁴	x	x	x	x	x	x	x	x
Other Emissions ⁵	–	2.4	4.6	4.6	5.7	6.0	6.4	7.1
Overall Total^{6,7}	803	1 920	1 320	1 470	1 320	1 210	760	494
Electricity Generation^{8,9}								
<i>GWh</i>								
Combustion	1 390	3 930	3 820	3 390	3 020	3 050	1 860	1 540
Coal	–	–	–	–	–	–	–	–
Natural Gas	1 310	3 350	3 140	2 370	2 030	1 850	1 150	1 032
Other Fuels	79.4	585	689	1 020	993	1 210	700	513
Steam from Waste Heat	–	–	–	768	648	651	38.8	27.6
Nuclear	–	–	–	–	–	–	–	–
Hydro	46 400	50 800	50 300	48 600	46 300	45 000	51 700	56 100
Other Renewables ¹⁰	–	–	–	–	–	123	187	158
Other Generation ¹¹	–	–	–	–	1 920	2 980	2 510	2 720
Overall Total⁷	47 800	54 700	54 100	52 800	51 900	51 800	56 300	60 500
Greenhouse Gas Intensity¹²								
<i>g GHG / kWh electricity generated</i>								
CO ₂ intensity (g CO ₂ / kWh)	17	35	24	27	25	23	13	8.1
CH ₄ intensity (g CH ₄ / kWh)	0.004	0.009	0.006	0.007	0.006	0.006	0.003	0.002
N ₂ O intensity (g N ₂ O / kWh)	0.0006	0.001	0.0006	0.0008	0.0008	0.0007	0.0004	0.0002
Generation Intensity (g CO₂ eq / kWh)⁷	17	35	24	28	25	23	14	8.2
Unallocated Energy (GWh) ^{13,14}	2 200	2 300	2 100	740	2 200	1 900	810	2 500
SF ₆ Emissions (kt CO ₂ eq) ¹⁵	43	43	36	44	41	42	20	34
Consumption Intensity (g CO₂ eq / kWh)¹⁶	19	37	26	29	27	25	14	9.1

Notes:

1. Data presented include emissions, generation and intensity for facilities classified under NAICS code 22111 - Electric Power Generation.
2. Preliminary data.
3. Emissions based on data taken from the Report on Energy Supply-Demand in Canada, Catalogue No. 57-003-XIB, Statistics Canada.
4. Includes GHG emissions from the combustion of refined petroleum products (light fuel oil, heavy fuel oil, and diesel), petroleum coke, still gas and other fuels not easily categorized.
5. GHG emissions from on-site combustion of fuel not directly related to electricity generation.
6. GHG emissions from the flooding of land for hydro dams are not included.
7. Totals may not add up to overall total due to rounding.
8. Taken from CANSIM Tables 127-0006 and 127-0007 (for 2005-2012).
9. Taken from the Electric Power Generation, Transmission and Distribution (EPGTD) publication, Catalogue No. 57-202-XIB, Statistics Canada (for 1990-2004).
10. Other Renewables - includes electricity generation by wind, tidal and solar.
11. NAICS category 221119, Other Electric Power Generation.
12. Intensity values have been rounded so as to present the estimated level of accuracy.
13. Adapted from Statistics Canada CANSIM Table 127-0008 (2005-2012) or Cat. No. 57-202-XIB (1990-2004).
14. Includes transmission line losses, metering differences and other losses.
15. The electric utility sector's share of emissions from electrical equipment from CRF Category 2.F.viii (Production and Consumption of Halocarbons and SF₆).
16. Consumption intensity values are impacted by unallocated energy and SF₆ transmission emissions.
 - Indicates no emissions or no electricity generation
 - 0 Indicates emissions or electricity generation value less than 0.1
 - unk Indicates unknown as appropriate data were unavailable
 - x Indicates data not shown due to statistical limitations

Table A13–12 Electricity Generation and GHG Emission Details for Yukon¹

	1990	2000	2005	2008	2009	2010	2011	2012 ²
Greenhouse Gas Emissions³								
<i>kt CO₂ equivalent</i>								
Combustion	93.6	22.1	22.9	18.1	17.0	18.7	27.6	18.4
Coal	–	–	–	–	–	–	–	–
Natural Gas	–	–	–	–	–	–	–	–
Other Fuels ⁴	93.6	22.1	22.9	18.1	17.0	18.7	27.6	18.4
Other Emissions ⁵	–	–	–	–	–	–	–	–
Overall Total^{6,7}	93.6	22.1	22.9	18.1	17.0	18.7	27.6	18.4
Electricity Generation^{8,9}								
<i>GWh</i>								
Combustion	62.1	36.7	22.4	23.9	22.6	25.0	36.9	24.4
Coal	–	–	–	–	–	–	–	–
Natural Gas	–	–	–	–	–	–	–	–
Other Fuels	62.1	36.7	22.4	23.9	22.6	25.0	36.9	24.4
Steam from Waste Heat	–	–	–	–	–	–	–	–
Nuclear	–	–	–	–	–	–	–	–
Hydro	423	261	320	348	379	380	388	430
Other Renewables ¹⁰	–	0.388	0.890	0.437	0.228	0	0.402	0.445
Other Generation ¹¹	–	–	–	–	–	–	–	–
Overall Total⁷	485	298	344	373	402	405	425	455
Greenhouse Gas Intensity¹²								
<i>g GHG / kWh electricity generated</i>								
CO ₂ intensity (g CO ₂ / kWh)	180	71	63	46	40	44	62	39
CH ₄ intensity (g CH ₄ / kWh)	0.009	0.004	0.003	0.002	0.002	0.002	0.003	0.002
N ₂ O intensity (g N ₂ O / kWh)	0.03	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Generation Intensity (g CO₂ eq / kWh)⁷	190	74	67	49	42	46	65	40
Unallocated Energy (GWh) ^{13,14}	47	24	45	29	29	33	51	58
SF ₆ Emissions (kt CO ₂ eq) ¹⁵	–	–	–	–	–	–	–	–
Consumption Intensity (g CO₂ eq / kWh)¹⁶	210	81	77	53	46	50	74	46

Notes:

1. Data presented include emissions, generation and intensity for facilities classified under NAICS code 22111 - Electric Power Generation.
2. Preliminary data.
3. Emissions based on data taken from the Report on Energy Supply-Demand in Canada, Catalogue No. 57-003-XIB, Statistics Canada.
4. Includes GHG emissions from the combustion of refined petroleum products (light fuel oil and heavy fuel oil), petroleum coke, still gas and other fuels not easily categorized.
5. GHG emissions from on-site combustion of fuel not directly related to electricity generation.
6. GHG emissions from the flooding of land for hydro dams are not included.
7. Totals may not add up to overall total due to rounding.
8. Taken from CANSIM Tables 127-0006 and 127-0007 (for 2005–2012).
9. Taken from the Electric Power Generation, Transmission and Distribution (EPGTD) publication, Catalogue No. 57-202-XIB, Statistics Canada (for 1990–2004).
10. Other Renewables - includes electricity generation by wind, tidal and solar.
11. NAICS category 221119, Other Electric Power Generation.
12. Intensity values have been rounded so as to present the estimated level of accuracy.
13. Adapted from Statistics Canada CANSIM Table 127-0008 (2005–2012) or Cat. No. 57-202-XIB (1990–2004).
14. Includes transmission line losses, metering differences and other losses.
15. The electric utility sector's share of emissions from electrical equipment from CRF Category 2.F.viii (Production and Consumption of Halocarbons and SF₆).
16. Consumption intensity values are impacted by unallocated energy and SF₆ transmission emissions.
 - Indicates no emissions or no electricity generation
 - 0 Indicates emissions or electricity generation value less than 0.1

Table A13–13 Electricity Generation and GHG Emission Details for the Northwest Territories and Nunavut¹

	1990	2000	2005	2008	2009	2010	2011	2012 ²
Greenhouse Gas Emissions³								
<i>kt CO₂ equivalent</i>								
Combustion	162	188	217	202	193	191	141	142
Coal	–	–	–	–	–	–	–	–
Natural Gas	–	8.21	27.5	21.8	19.6	19.6	17.1	4.46
Other Fuels ⁴	162	180	189	180	174	171	124	137
Other Emissions ⁵	–	1.5	4.6	7.6	–	1.5	–	–
Overall Total⁷	162	190	222	210	193	192	141	142
Electricity Generation^{8,9}								
<i>GWh</i>								
Combustion	227	195	219	269	251	247	181	181
Coal	–	–	–	–	–	–	–	–
Natural Gas	–	15.8	23.3	29.3	27.5	27.5	23.7	5.63
Other Fuels	227	179	196	240	223	220	157	175
Steam from Waste Heat	–	–	–	–	–	–	–	–
Nuclear	–	–	–	–	–	–	–	–
Hydro	226	247	259	247	254	254	260	253
Other Renewables ¹⁰	–	–	–	–	–	–	–	–
Other Generation ¹¹	–	–	–	–	–	–	–	–
Overall Total⁷	453	442	478	516	504	501	442	434
Greenhouse Gas Intensity¹²								
<i>g GHG / kWh electricity generated</i>								
CO ₂ intensity (g CO ₂ / kWh)	340	340	440	390	370	360	310	310
CH ₄ intensity (g CH ₄ / kWh)	0.02	0.02	0.03	0.03	0.02	0.02	0.02	0.02
N ₂ O intensity (g N ₂ O / kWh)	0.05	0.06	0.06	0.05	0.05	0.05	0.04	0.05
Generation Intensity (g CO₂ eq / kWh)⁷	360	430	460	410	380	380	320	330
Unallocated Energy (GWh) ^{13,14}	21	21	26	20	16	26	27	16
SF ₆ Emissions (kt CO ₂ eq) ¹⁵	–	–	–	–	–	–	–	–
Consumption Intensity (g CO₂ eq / kWh)¹⁶	380	450	490	420	400	400	340	340

Notes:

1. Data presented include emissions, generation and intensity for facilities classified under NAICS code 22111 - Electric Power Generation.
 2. Preliminary data.
 3. Emissions based on data taken from the Report on Energy Supply-Demand in Canada, Catalogue No. 57-003-XIB, Statistics Canada.
 4. Includes GHG emissions from the combustion of refined petroleum products (light fuel oil, heavy fuel oil, and diesel), petroleum coke, still gas and other fuels not easily categorized.
 5. GHG emissions from on-site combustion of fuel not directly related to electricity generation.
 6. GHG emissions from the flooding of land for hydro dams are not included.
 7. Totals may not add up to overall total due to rounding.
 8. Taken from CANSIM Tables 127-0006 and 127-0007 (for 2005-2012).
 9. Taken from the Electric Power Generation, Transmission and Distribution (EPGTD) publication, Catalogue No. 57-202-XIB, Statistics Canada (for 1990-2004).
 10. Other Renewables - includes electricity generation by wind, tidal and solar.
 11. NAICS category 221119, Other Electric Power Generation.
 12. Intensity values have been rounded so as to present the estimated level of accuracy.
 13. Adapted from Statistics Canada CANSIM Table 127-0008 (2005-2012) or Cat. No. 57-202-XIB (1990-2004).
 14. Includes transmission line losses, metering differences and other losses.
 15. The electric utility sector's share of emissions from electrical equipment from CRF Category 2.F.viii (Production and Consumption of Halocarbons and SF₆).
 16. Consumption intensity values are impacted by unallocated energy and SF₆ transmission emissions.
- Indicates no emissions or no electricity generation
0 Indicates emissions or electricity generation value less than 0.1

References

Annex 13, Electricity in Canada: Summary and Intensity Tables

Statistics Canada. Electric Power Generation, Transmission and Distribution (annual). Catalogue #57-202-XIB.

Statistics Canada. Report on Energy Supply–Demand in Canada (annual). Catalogue #57-003-XIB.

Statistics Canada. No date. Table 127-0006: Electricity generated from fuels, by electric utility thermal plants (annual). CANSIM 2005-2012 [accessed 2014 January].

Statistics Canada. No date. Table 127-0007: Electric power generation, by class of electricity producer (annual). CANSIM 2005-2012 [accessed 2014 January].

Statistics Canada. No date. Table 127-0008: Supply and disposition of electric power, electric utilities and industry (annual). CANSIM 2005-2012 [accessed 2014 January].

