CANADA'S GREENHOUSE GAS INVENTORY 1990 - 1998

FINAL SUBMISSION TO THE UNFCCC SECRETARIAT

OCTOBER 2000

Volume 2 of 2

APPENDICES

Environment Canada Environnement Canada

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Canada's Greenhouse Gas Inventory

1990 -1998

Final Submission to the UNFCCC Secretariat

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Appendices

Greenhouse Gas Division
Pollution Data Branch
Air Pollution Prevention Directorate

Environment Canada

October 2000

List of Appendices

Appendix 1

Emissions Associated with the Export of Fossil Fuels

Appendix - 1

Emissions Associated with the Export of Fossil Fuels

Canada exports a considerable portion of its fossil fuel production, most of it to the United States. Here, an analysis of the emissions associated with these exports is provided. Though refined petroleum products form a small portion of fossil fuel exports, the majority consists of natural gas and crude oil. Only the latter two exports are considered here.

Though in-depth studies have not been performed since 1997, when data to 1995 was analyzed, it is possible to make a rough estimate of the emissions associated with 1998 exports. Using the 1997 (Environment Canada) study[1] as a basis, emissions from *net*[2] natural gas exports are estimated to be 28 Mt of CO_2 eq and those from *net* crude oil exports, 19 Mt.

By comparison, in 1990 net export emissions from natural gas and crude oil were approximately 13 and 9 Mt of CO_2 eq when only 36% and 7% of production was exported (respectively). The growth of these export-related emissions, 25 Mt, represent over 50% of the 51 Mt increase in the Energy Industries area of the Canadian Greenhouse Gas Inventory.

It must be noted that the absolute emission estimates provided here have a high level of uncertainty, as great as 40% or more. On the other hand, the trend estimates are more accurate and can be considered to be representative[3].

Methodology: Net Fossil Fuel Net Exports

The 1996 to 1998 estimates have been calculated using energy data from Statistics Canada[4], while emissions attributable to the net exports were extrapolated from a study prepared for Environment Canada by T.J. McCann et al. (1997) entitled: "Fossil Fuel Energy Trade & Greenhouse Gas Emissions". Using the emission results presented in the study, an empirical relationship was developed between those emissions and the net exported energy associated with the volumes of crude oil and natural gas, as recorded by Statistics Canada. This trend was then applied to the actual 1996 - 1998 net exports to develop the emissions estimate.

Natural Gas - this category accounts for GHG emissions specific to the production, gathering, processing and transmission of natural gas. It includes emissions from gas conservation systems at oil batteries (i.e., dehydrators, compressors and related piping), and excludes emissions that may be attributed to the handling, processing (e.g., stabilization, treating and/or fractionation) or

[1] McCann, T.J. et al., *Fossil Fuel Energy Trade & Greenhouse Gas Emissions*, May 1997.

[2] Net exports are exports minus imports

[3] The original McCann study evaluated the precision of the export emission estimates to be between 25 and 40%, but the 1990–1995 trend was considered "fully representative". The 1996 to 1998 results presented here are based on extrapolation and are therefore assumed to have higher uncertainty.

[4] Statistics Canada. *Quarterly Report on Energy Supply and Demand,* Cat. #57-003; Government of Canada, Ottawa, 1990-1998.

storage of natural gas liquids at gas facilities. Basically, only those sources that exist for the primary purpose of producing natural gas for sale are considered. Gas distribution systems and end use emissions are specifically excluded since they pertain to domestic gas consumption rather than gas imports and exports.

Natural Gas	1990	1991	1992	1993	1994	1995	1996	1997	1998
Production[5] (PJ)	4,184	4,406	4,865	5,348	5,831	6,129	6,343	6,410	6,674
Net Export (PJ)	1,513	1,792	2,130	2,364	2,712	2,985	3,006	3,069	3,355
Emissions[6] (Mt CO_2eq)	13	15	17	19	22	25	25	25	28

Crude Oils - similarly, this category considers emissions related to the production, treatment, storage and transport of crude oils. Emissions from venting and flaring of associated or solution gas at these facilities are allocated to this category. Any gas equipment that is dedicated to servicing on-site fuel needs are part of the oil system. Gas conservation systems that produce into gas gathering systems are allocated to the natural gas system.

Crude Oil	1990	1991	1992	1993	1994	1995	1996	1997	1998
Production[5] (PJ)	3,568	3,548	3,689	3,844	4,008	4,148	4,263	4,483	4,691
Net Export (PJ)	240	472	724	717	796	1043	976	1,011	1,257
Emission[6] (Mt CO_2eq)	9	11	13	11	14	18	16	16	19

[5] Exports minus imports.

[6] Values for '96-'98 are extrapolated.

Appendix 2a

Common Reporting Format – 1998

TABLE 1 SECTORAL REPORT FOR ENERGY
(Sheet 1 of 2)

Canada
1998
Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO_2	CH_4	N_2O	NO_X	CO	NMVOC	SO_2
	(Gg)						
Total Energy	**490,213.33**	**2,084.40**	**35.95**	**0.00**	**0.00**	**0.00**	**0.00**
A. Fuel Combustion Activities (Sectoral Approach)	**476,426.48**	**245.16**	**35.95**	**0.00**	**0.00**	**0.00**	**0.00**
1. Energy Industries	**181,201.43**	**2.08**	**3.22**	**0.00**	**0.00**	**0.00**	**0.00**
a. Public Electricity and Heat Production	124,002.71	1.08	2.90	NE	NE	NE	NE
b. Petroleum Refining	27,213.77	0.32	0.02	NE	NE	NE	NE
c. Manufacture of Solid Fuels and Other Energy Industries	29,984.95	0.68	0.29	NE	NE	NE	NE
2. Manufacturing Industries and Construction	**53,128.59**	**1.72**	**1.62**	**0.00**	**0.00**	**0.00**	**0.00**
a. Iron and Steel	6,911.61	0.22	0.44	NE	NE	NE	NE
b. Non-Ferrous Metals	3,404.63	0.05	0.07	NE	NE	NE	NE
c. Chemicals	8,630.00	0.20	0.08	NE	NE	NE	NE
d. Pulp, Paper and Print	10,803.39	0.62	0.64	NE	NE	NE	NE
e. Food Processing, Beverages and Tobacco	0.00	0.00	0.00	NE	NE	NE	NE
f. Other *(please specify)*	23,378.96	0.64	0.39	0.00	0.00	0.00	0.00
3. Transport	**174,251.81**	**25.12**	**28.08**	**0.00**	**0.00**	**0.00**	**0.00**
a. Civil Aviation	12,582.40	0.64	1.23	NE	NE	NE	NE
b. Road Transportation	121,526.53	15.72	18.49	NE	NE	NE	NE
c. Railways	5,456.72	0.30	2.20	NE	NE	NE	NE
d. Navigation	4,826.93	0.36	1.01	NE	NE	NE	NE
e. Other Transportation *(please specify)*	29,859.23	8.10	5.15	0.00	0.00	0.00	0.00

TABLE 1 SECTORAL REPORT FOR ENERGY
(Sheet 2 of 2)

Canada
1998
Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO_2	CH_4	N_2O	NO_X	CO	NMVOC	SO_2
	(Gg)						
4. Other Sectors	**67,844.65**	**216.25**	**3.04**	**0.00**	**0.00**	**0.00**	**0.00**
a. Commercial/Institutional	26,957.27	0.53	0.23	NE	NE	NE	NE
b. Residential	38,294.50	215.67	2.76	NE	NE	NE	NE
c. Agriculture/Forestry/Fisheries	2,592.88	0.05	0.04	NE	NE	NE	NE
5. Other *(please specify)* [1]	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
a. Stationary	0.00	0.00	0.00	0.00	0.00	0.00	0.00
b. Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00
B. Fugitive Emissions from Fuels	**13,786.85**	**1,839.23**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
1. Solid Fuels	**0.00**	**64.96**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
a. Coal Mining	0.00	64.96	NA	NE	NE	NE	
b. Solid Fuel Transformation	NI	NI	NA	NE	NE	NE	NE
c. Other *(please specify)*	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2. Oil and Natural Gas	**13,786.85**	**1,774.28**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
a. Oil	39.13	662.50		NE	NE	NE	NE
b. Natural Gas	27.08	1,082.87				NE	NE
c. Venting and Flaring	13,720.64	28.92	0.00	0.00	0.00	0.00	0.00
Venting	7,170.89	0.00				NE	NE
Flaring	6,549.75	28.92	0.00	NE	NE	NE	NE
d. Other *(please specify)*	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Memo Items: [2]							
International Bunkers	**6,654.90**	**0.14**	**0.83**	**0.00**	**0.00**	**0.00**	**0.00**
Aviation	2,878.90	0.09	0.28	NE	NE	NE	NE
Marine	3,776.00	0.05	0.55	NE	NE	NE	NE
Multilateral Operations	0.00	0.00	0.00	NE	NE	NE	NE
CO_2 Emissions from Biomass	**62,820.69**						

[1] Include military fuel use under this category.

[2] Please do not include in energy totals.

TABLE 1.A(a) SECTORAL BACKGROUND DATA FOR ENERGY Canada
Fuel Combustion Activities - Sectoral Approach 1998
(Sheet 1 of 4) Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	AGGREGATE ACTIVITY DATA		IMPLIED EMISSION FACTORS [2]				EMISSIONS		
	Consumption		CO_2	CH_4	N_2O		CO_2	CH_4	N_2O
	(TJ)	[1]	(t/TJ)	(kg/TJ)	(kg/TJ)		(Gg)	(Gg)	(Gg)
1.A. Fuel Combustion	**8,768,968.16**	GCV					**476,426.48**	**245.16**	**35.95**
Liquid Fuels	3,357,343.01	GCV	68.58	6.92	8.38		230,257.11	23.25	28.13
Solid Fuels	1,288,148.96	GCV	81.78	0.73	2.56		105,348.93	0.94	3.30
Gaseous Fuels	3,346,514.12	GCV	41.59	1.45	0.46		139,193.12	4.85	1.55
Biomass	749,808.35	GCV	83.78	287.26	3.95	[3]	62,820.69	215.39	2.96
Other Fuels	27,153.71	GCV	59.93	27.42	0.00		1,627.31	0.74	0.00
1.A.1. Energy Industries	**2,641,918.00**	GCV					**181,201.43**	**2.08**	**3.22**
Liquid Fuels	623,744.00	GCV	68.08	0.72	0.20		42,463.19	0.45	0.13
Solid Fuels	1,079,942.00	GCV	91.80	0.74	2.45		99,137.38	0.80	2.65
Gaseous Fuels	938,232.00	GCV	42.21	0.89	0.47		39,600.86	0.83	0.44
Biomass	0.00	GCV	0.00	0.00	0.00	[3]	0.00	0.00	0.00
Other Fuels	0.00	GCV	0.00	0.00	0.00		0.00	0.00	0.00
a. Public Electricity and Heat Production	1,507,783.00	GCV					124,002.71	1.08	2.90
Liquid Fuels	178,716.00	GCV	73.02	1.01	0.71		13,050.58	0.18	0.13
Solid Fuels	1,072,837.00	GCV	91.67	0.74	2.46		98,348.61	0.80	2.64
Gaseous Fuels	256,230.00	GCV	49.19	0.39	0.52		12,603.52	0.10	0.13
Biomass	0.00	GCV	0.00	0.00	0.00	[3]	0.00	0.00	0.00
Other Fuels		GCV	0.00	0.00	0.00				
b. Petroleum Refining	427,103.00	GCV					27,213.77	0.32	0.02
Liquid Fuels	382,875.00	GCV	65.39	0.69	0.00		25,038.05	0.27	0.00
Solid Fuels	0.00	GCV	0.00	0.00	0.00		0.00	0.00	0.00
Gaseous Fuels	44,228.00	GCV	49.19	1.27	0.52		2,175.72	0.06	0.02
Biomass	0.00	GCV	0.00	0.00	0.00	[3]	0.00	0.00	0.00
Other Fuels		GCV	0.00	0.00	0.00				
c. Manufacture of Solid Fuels and Other Energy Industries	707,032.00	GCV					29,984.95	0.68	0.29
Liquid Fuels	62,153.00	GCV	70.38	0.00	0.00		4,374.56	0.00	0.00
Solid Fuels	7,105.00	GCV	111.02	0.28	1.55		788.77	0.00	0.01
Gaseous Fuels	637,774.00	GCV	38.92	1.06	0.44		24,821.62	0.68	0.28
Biomass	0.00	GCV	0.00	0.00	0.00	[3]	0.00	0.00	0.00
Other Fuels		GCV	0.00	0.00	0.00				

[1] Activity data should be calculated using net calorific values (NCV) as specified by the IPCC Guidelines. If gross calorific values (GCV) were used, please indicate this by replacing "NCV" with "GCV" in this column.

[2] Accurate estimation of CH_4 and N_2O emissions depends on combustion conditions, technology, and emission control policy, as well as fuel characteristics. Therefore, caution should be used when comparing the implied emission factors.

[3] Carbon dioxide emissions from biomass are reported under Memo Items. The content of the cells is not included in the totals.

Note: For the coverage of fuel categories, please refer to the IPCC Guidelines (Volume 1. Reporting Instructions - Common Reporting Framework, section 1.2, p. 1.19). If some derived gases (e.g. gas work gas, coke oven gas, blast gas, oxygen steel furnace gas, etc.) are considered, Parties should provide information on the allocation of these derived gases under the above fuel categories (liquid, soild, gaseous, biomass, other fuels) in the documentation box at the end of sheet 4 of this table.

TABLE 1.A(a) SECTORAL BACKGROUND DATA FOR ENERGY Canada
Fuel Combustion Activities - Sectoral Approach 1998
(Sheet 2 of 4) Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	AGGREGATE ACTIVITY DATA		IMPLIED EMISSION FACTORS [2]				EMISSIONS		
	Consumption		CO_2	CH_4	N_2O		CO_2	CH_4	N_2O
	(TJ)	[1]	(t/TJ)	(kg/TJ)	(kg/TJ)		(Gg)	(Gg)	(Gg)
1.A.2 Manufacturing Industries and Construction	**2,032,752.38**	GCV					**53,128.59**	**1.72**	**1.62**
Liquid Fuels	206,099.32	GCV	46.29	0.37	0.01		9,539.91	0.08	0.00
Solid Fuels	206,468.96	GCV	29.34	0.66	2.97		6,057.86	0.14	0.61
Gaseous Fuels	1,146,600.10	GCV	32.73	0.92	0.39		37,530.82	1.05	0.45
Biomass	473,584.00	GCV	18.39	0.97	1.16	[3]	8,709.60	0.46	0.55
Other Fuels	0.00	GCV	0.00	0.00	0.00		0.00	0.00	0.00
a. Iron and Steel	118,272.00	GCV					6,911.61	0.22	0.44
Liquid Fuels	7,486.00	GCV	74.08	0.00	0.00		554.57	0.00	0.00
Solid Fuels	24,683.00	GCV	85.97	4.33	16.08		2,121.96	0.11	0.40
Gaseous Fuels	86,103.00	GCV	49.19	1.25	0.52		4,235.08	0.11	0.05
Biomass	0.00	GCV	0.00	0.00	0.00	[3]	0.00	0.00	0.00
Other Fuels		GCV	0.00	0.00	0.00				
b. Non-Ferrous Metals	53,793.00	GCV					3,404.63	0.05	0.07
Liquid Fuels	11,008.00	GCV	77.18	0.45	0.00		849.58	0.01	0.00
Solid Fuels	12,665.00	GCV	84.75	0.55	3.87		1,073.42	0.01	0.05
Gaseous Fuels	30,120.00	GCV	49.19	1.26	0.53		1,481.63	0.04	0.02
Biomass	0.00	GCV	0.00	0.00	0.00	[3]	0.00	0.00	0.00
Other Fuels		GCV	0.00	0.00	0.00				
c. Chemicals	170,046.00	GCV					8,630.00	0.20	0.08
Liquid Fuels	10,074.00	GCV	75.57	0.20	0.00		761.26	0.00	0.00
Solid Fuels	0.00	GCV	0.00	0.00	0.00		0.00	0.00	0.00
Gaseous Fuels	159,972.00	GCV	49.19	1.26	0.53		7,868.74	0.20	0.08
Biomass	0.00	GCV	0.00	0.00	0.00	[3]	0.00	0.00	0.00
Other Fuels		GCV	0.00	0.00	0.00				
d. Pulp, Paper and Print	661,529.00	GCV					10,803.39	0.62	0.64
Liquid Fuels	57,141.00	GCV	74.03	0.00	0.00		4,230.27	0.00	0.00
Solid Fuels	3,549.00	GCV	88.38	0.85	5.35		313.66	0.00	0.02
Gaseous Fuels	127,255.00	GCV	49.19	1.26	0.53		6,259.46	0.16	0.07
Biomass	473,584.00	GCV	18.39	0.97	1.16	[3]	8,709.60	0.46	0.55
Other Fuels		GCV	0.00	0.00	0.00				
e. Food Processing, Beverages and Tobacco	0.00	GCV					0.00	0.00	0.00
Liquid Fuels	IE	GCV	0.00	0.00	0.00		IE	IE	IE
Solid Fuels	IE	GCV	0.00	0.00	0.00		IE	IE	IE
Gaseous Fuels	IE	GCV	0.00	0.00	0.00		IE	IE	IE
Biomass	IE	GCV	0.00	0.00	0.00	[3]	IE	IE	IE
Other Fuels		GCV	0.00	0.00	0.00				
f. Other *(please specify)*	1,029,112.38	GCV					23,378.96	0.64	0.39
Liquid Fuels	120,390.32	GCV	26.12	0.58	0.02		3,144.23	0.07	0.00
Solid Fuels	165,571.96	GCV	15.39	0.12	0.90		2,548.82	0.02	0.15
Gaseous Fuels	743,150.10	GCV	23.80	0.73	0.32		17,685.91	0.55	0.24
Biomass	0.00	GCV	0.00	0.00	0.00	[3]	0.00	0.00	0.00
Other Fuels		GCV	0.00	0.00	0.00				

TABLE 1.A(a) SECTORAL BACKGROUND DATA FOR ENERGY Canada
Fuel Combustion Activities - Sectoral Approach 1998
(Sheet 3 of 4) Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	AGGREGATE ACTIVITY DATA		IMPLIED EMISSION FACTORS [2]				EMISSIONS		
	Consumption		CO_2	CH_4	N_2O		CO_2	CH_4	N_2O
	(TJ)	[1]	(t/TJ)	(kg/TJ)	(kg/TJ)		(Gg)	(Gg)	(Gg)
1.A.3 Transport	**2,593,219.42**	GCV					**174,251.81**	**25.12**	**28.08**
Gasoline	1,391,313.56	GCV	68.35	8.81	13.19		95,095.33	12.26	18.35
Diesel	927,818.13	GCV	70.47	11.09	10.34		65,382.30	10.29	9.59
Natural Gas	246,934.02	GCV	49.19	7.37	0.53		12,146.87	1.82	0.13
Solid Fuels	0.00	GCV	0.00	0.00	0.00		0.00	0.00	0.00
Biomass	0.00	GCV	0.00	0.00	0.00	[3]	0.00	0.00	0.00
Other Fuels	27,153.71	GCV	59.93	27.42	0.00		1,627.31	0.74	0.00
a. Civil Aviation	179,492.30	GCV					12,582.40	0.64	1.23
Aviation Gasoline	3,817.93	GCV	69.51	65.22	6.81		265.39	0.25	0.03
Jet Kerosene	175,674.37	GCV	70.11	2.20	6.88		12,317.01	0.39	1.21
b. Road Transportation	1,769,488.60	GCV					121,526.53	15.72	18.49
Gasoline	1,211,821.26	GCV	68.09	9.59	14.13		82,512.93	11.63	17.12
Diesel Oil	527,837.60	GCV	70.58	3.42	2.59		37,254.31	1.80	1.37
Natural Gas	2,676.02	GCV	49.32	576.98	1.49		131.98	1.54	0.00
Biomass		GCV	0.00	0.00	0.00	[3]			.
Other Fuels *(please specify)*	27,153.71	GCV					1,627.31	0.74	0.00
Propane	27,153.71	GCV	59.93	27.42	0.00		1,627.31	0.74	0.00
		GCV	0.00	0.00	0.00				
c. Railways	77,313.58	GCV					5,456.72	0.30	2.20
Solid Fuels		GCV	0.00	0.00	0.00				
Liquid Fuels	77,313.58	GCV	70.58	3.88	28.44		5,456.72	0.30	2.20
Other Fuels *(please specify)*	0.00	GCV					0.00	0.00	0.00
		GCV	0.00	0.00	0.00				
d. Navigation	66,903.55	GCV					4,826.93	0.36	1.01
Coal		GCV	0.00	0.00	0.00				
Residual Oil	30,254.25	GCV	74.05	7.21	1.92		2,240.25	0.22	0.06
Gas/Diesel Oil	36,649.30	GCV	70.58	3.87	25.87		2,586.68	0.14	0.95
Other Fuels *(please specify)*	0.00	GCV					0.00	0.00	0.00
		GCV	0.00	0.00	0.00				
		GCV	0.00	0.00	0.00				
e. Other Transportation	500,021.39	GCV					29,859.23	8.10	5.15
Liquid Fuels	255,763.39	GCV	69.77	30.61	19.64		17,844.34	7.83	5.02
Solid Fuels		GCV	0.00	0.00	0.00				
Gaseous Fuels	244,258.00	GCV	49.19	1.13	0.52		12,014.89	0.28	0.13

TABLE 1.A(a) SECTORAL BACKGROUND DATA FOR ENERGY Canada
Fuel Combustion Activities - Sectoral Approach 1998
(Sheet 4 of 4) Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	AGGREGATE ACTIVITY DATA		IMPLIED EMISSION FACTORS [2]				EMISSIONS		
	Consumption		CO_2	CH_4	N_2O		CO_2	CH_4	N_2O
	(TJ)	[1]	(t/TJ)	(kg/TJ)	(kg/TJ)		(Gg)	(Gg)	(Gg)
1.A.4 Other Sectors	**1,501,078.35**	GCV					**67,844.65**	**216.25**	**3.04**
Liquid Fuels	208,368.00	GCV	85.31	0.82	0.28		17,776.38	0.17	0.06
Solid Fuels	1,738.00	GCV	88.43	2.52	18.49		153.69	0.00	0.03
Gaseous Fuels	1,014,748.00	GCV	49.19	1.13	0.52		49,914.57	1.14	0.53
Biomass	276,224.35	GCV	195.90	778.10	8.74	[3]	54,111.09	214.93	2.41
Other Fuels	0.00	GCV	0.00	0.00	0.00		0.00	0.00	0.00
a. Commercial/Institutional	483,953.00	GCV					26,957.27	0.53	0.23
Liquid Fuels	67,208.00	GCV	96.08	0.94	0.21		6,457.63	0.06	0.01
Solid Fuels	12.00	GCV	56.67	0.00	0.00		0.68	0.00	0.00
Gaseous Fuels	416,733.00	GCV	49.19	1.13	0.52		20,498.96	0.47	0.22
Biomass	0.00	GCV	0.00	0.00	0.00	[3]	0.00	0.00	0.00
Other Fuels		GCV	0.00	0.00	0.00				
b. Residential	977,893.35	GCV					38,294.50	215.67	2.76
Liquid Fuels	125,695.00	GCV	78.72	0.73	0.31		9,894.67	0.09	0.04
Solid Fuels	1,726.00	GCV	88.65	0.80	5.87		153.01	0.00	0.01
Gaseous Fuels	574,248.00	GCV	49.19	1.13	0.52		28,246.81	0.65	0.30
Biomass	276,224.35	GCV	195.90	778.10	8.74	[3]	54,111.09	214.93	2.41
Other Fuels		GCV	0.00	0.00	0.00				
c. Agriculture/Forestry/Fisheries	39,232.00	GCV					2,592.88	0.05	0.04
Liquid Fuels	15,465.00	GCV	92.08	0.97	0.32		1,424.08	0.02	0.01
Solid Fuels	0.00	GCV	0.00	0.00	0.00		0.00	0.00	0.02
Gaseous Fuels	23,767.00	GCV	49.18	1.14	0.50		1,168.80	0.03	0.01
Biomass	0.00	GCV	0.00	0.00	0.00	[3]	0.00	0.00	0.00
Other Fuels		GCV	0.00	0.00	0.00				
1.A.5 Other (Not elsewhere specified)[4]	**0.00**	GCV					**0.00**	**0.00**	**0.00**
Liquid Fuels	IE	GCV	0.00	0.00	0.00		IE	IE	IE
Solid Fuels	IE	GCV	0.00	0.00	0.00		IE	IE	IE
Gaseous Fuels	IE	GCV	0.00	0.00	0.00		IE	IE	IE
Biomass		GCV	0.00	0.00	0.00	[3]			
Other Fuels		GCV	0.00	0.00	0.00				

[4] Include military fuel use under this category.

Documentation Box:

Sheet 2 of 4 (1.A (2)s2):

f. Other - includes manufacutring and construction activities

[4] 1.A.5. Military fuel use aggrated activity data and emissions are reported in 1.A.3 Transport Sectors and 1.A.4. Other Sectors.

NOx, CO, NMVOC, & SO_2: For all sectors - emissions are not presently available.

TABLE 1.A(b) SECTORAL BACKGROUND DATA FOR ENERGY
CO_2 from Fuel Combustion Activities - Reference Approach (IPCC Worksheet 1-1)
(Sheet 1 of 1)

Canada
1998
Submission 2000

FUEL TYPES			Unit	Production	Imports	Exports	International bunkers	Stock change	Apparent consumption	Conversion factor [1] (TJ/Unit)	[1]	Apparent consumption (TJ)	Carbon emission factor (t C/TJ)	Carbon content (Gg C)	Carbon stored (Gg C)	Net carbon emissions (Gg C)	Fraction of carbon oxidized	Actual CO_2 emissions (Gg CO_2)
Liquid Fossil	Primary Fuels	Crude Oil	Ml	134,475.20	44,687.90	77,272.70		-658.50	102,548.90	38.5	NCV	3,949,260.69	20.00	78,985.21	0.00	78,985.21	0.99	286,716.33
		Orimulsion	NA	0.00	0.00	0.00		0.00	0.00	0.0	NCV	0.00	NA	0.00	0.00	0.00	NA	NA
		Natural Gas Liquids	Ml	26,621.20	480.00	13,661.90		2,487.00	10,952.30	21.38	NCV	234,131.62	16.46	3,854.19	0.00	3,854.19	1.00	14,061.38
	Secondary Fuels	Gasoline	$m^3 \times 10^3$		2,168.50	5,311.50	1.30	102.80	-3,247.10	33.4	NCV	-108,404.30	18.90	-2,048.84	0.00	-2,048.84	0.99	-7,437.29
		Jet Kerosene	$m^3 \times 10^3$		812.70	376.20	1,127.70	18.30	-709.50	36.0	NCV	-25,543.39	19.50	-498.10	0.00	-498.10	0.99	-1,808.09
		Other Kerosene	$m^3 \times 10^3$		26.30	81.80	0.00	-196.20	140.70	36.1	NCV	5,083.65	19.60	99.64	0.00	99.64	0.99	361.69
		Shale Oil	NA		0.00	0.00		0.00	0.00	0.0	NCV	0.00	NA	0.00	0.00	0.00	0.99	0.00
		Gas / Diesel Oil	$m^3 \times 10^3$		701.80	5,621.70	211.10	172.70	-5,303.70	36.4	NCV	-192,924.92	20.20	-3,897.08	0.00	-3,897.08	0.99	-14,146.41
		Residual Fuel Oil	$m^3 \times 10^3$		3,563.00	2,028.20	1,035.40	140.80	358.60	39.9	NCV	14,308.37	21.10	301.91	0.00	301.91	0.99	1,095.92
		LPG	$m^3 \times 10^3$		133.60	258.40		149.40	-274.20	24.0	NCV	-6,583.49	17.20	-113.24	255.68	-368.91	0.99	-1,339.16
		Ethane	NA		0.00	0.00		0.00	0.00	17.9	NCV	0.00	16.80	0.00	1,455.45	-1,455.45	0.99	-5,283.29
		Naphtha	$m^3 \times 10^3$		0.00	0.10		7.80	-7.90	36.0	NCV	-284.46	20.00	-5.69	68.90	-74.59	0.99	-270.78
		Bitumen	$m^3 \times 10^3$		175.90	1,064.50		-1.00	-887.60	40.2	NCV	-35,661.94	22.00	-784.56	2,895.09	-3,679.65	0.99	-13,357.12
		Lubricants	$m^3 \times 10^3$		193.60	522.30	0.00	10.00	-338.70	37.7	NCV	-12,780.64	20.00	-255.61	400.17	-655.79	0.99	-2,380.50
		Petroleum Coke	$m^3 \times 10^3$		980.20	135.60		-13.80	858.40	37.2	NCV	31,913.85	27.50	877.63	0.00	877.63	0.99	3,185.80
		Refinery Feedstocks	$m^3 \times 10^3$		0.40	431.70		144.10	-575.40	23.0	NCV	-13,205.43	20.00	-264.11	1,772.22	-2,036.33	0.99	-7,391.86
		Other Oil	$m^3 \times 10^3$		1,678.50	988.40		138.40	551.70	36.2	NCV	19,955.54	20.00	399.11	166.64	232.47	0.99	843.87
Liquid Fossil Totals												3,859,265.13		76,650.46	7,014.15	69,636.32		252,850.48
Solid Fossil	Primary Fuels	Anthracite [2]	kt	0.00	612.80	0.00		0.00	612.80	27.6	NCV	16,882.64	26.80	452.45	0.00	452.45	0.98	1,625.82
		Coking Coal	NA	0.00	0.00	0.00		0.00	0.00	28.8	NCV	0.00	NA	0.00	0.00	0.00	0.98	0.00
		Other Bit. Coal	kt	38,292.80	15,926.60	34,143.20	0.00	61.30	20,014.90	28.8	NCV	576,028.82	25.80	14,861.54	0.00	14,861.54	0.98	53,402.48
		Sub-bit. Coal	kt	25,285.30	2,162.90	0.00	0.00	0.00	27,448.20	17.4	NCV	477,049.72	26.20	12,498.70	0.00	12,498.70	0.98	44,912.00
		Lignite	kt	11,790.10	0.00	0.00		0.00	11,790.10	14.3	NCV	168,008.93	27.60	4,637.05	0.00	4,637.05	0.98	16,662.45
		Oil Shale	NA	0.00	0.00	0.00		0.00	0.00	0.0	NCV	0.00	NA	0.00	0.00	0.00	NA	NA
		Peat	NA	0.00	0.00	0.00		0.00	0.00	0.0	NCV	0.00	NA	0.00	0.00	0.00	NA	NA
	Secondary Fuels	BKB & Patent Fuel	NA		0.00	0.00		0.00	0.00	0.0	NCV	0.00	NA	0.00	0.00	0.00	NA	NA
		Coke Oven/Gas Coke	kt		502.70	316.20		0.00	186.50	27.4	NCV	5,108.24	29.50	150.69	0.00	150.69	0.98	541.49
Solid Fuel Totals												1,243,078.34		32,600.44	0.00	32,600.44		117,144.25
Gaseous Fossil		Natural Gas (Dry)	Gl	173,347.10	791.80	88,588.60		2,290.50	83,259.80	34.4	NCV	2,863,970.60	15.30	43,818.75	916.89	42,901.87	1.00	156,520.30
Total												**7,966,314.07**		**153,069.65**	**7,931.03**	**145,138.62**		**526,515.04**
Biomass total												757,578.07		19,596.84	0.00	19,596.84		71,855.08
		Solid Biomass	kt	24,945.45	0.00	0.00		0.00	24,945.45	18.0	NCV	449,018.07	29.90	13,425.64	0.00	13,425.64	1.00	49,227.35
		Liquid Biomass	kt	22,040.00	0.00	0.00		0.00	22,040.00	14.0	NCV	308,560.00	20.00	6,171.20	0.00	6,171.20	1.00	22,627.73
		Gas Biomass	NA	0.00	0.00	0.00		0.00	0.00	0.0	NCV	0.00	NA	0.00	0.00	0.00	1.00	0.00

[1] To convert quantities expressed in natural units to energy units, use net calorific values (NCV). If gross calorific values (GCV) are used in this table, please indicate this by replacing "NCV" with "GCV" in this column.

[2] If Anthracite is not separately available, include with Other Bituminous Coal.

TABLE 1.A(c) COMPARISON OF CO_2 EMISSIONS FROM FUEL COMBUSTION
(Sheet 1 of 1)

Canada
1998
Submission 2000

FUEL TYPES	Reference approach		National approach [1]		Difference [2]	
	Energy consumption (PJ)	CO_2 emissions (Gg)	Energy consumption (PJ)	CO_2 emissions (Gg)	Energy consumption (%)	CO_2 emissions (%)
Liquid Fuels (excluding international bunkers)	3,859.27	252,850.48	3,357.34	230,257.11	14.95	9.81
Solid Fuels (excluding international bunkers)	1,243.08	117,144.25	1,288.15	105,348.93	-3.50	11.20
Gaseous Fuels	2,863.97	156,520.30	3,346.51	139,193.12	-14.42	12.45
Other [3]			27.15	1,627.31	-100.00	-100.00
Total [3]	**7,966.31**	**526,515.04**	**8,019.16**	**476,426.48**	**-0.66**	**10.51**

[1] "National approach" is used to indicate the approach (if different from the Reference approach) followed by the Party to estimate its CO_2 emissions from fuel combustion reported in the national GHG inventory.

[2] Difference of the Reference approach over the National approach (i.e. difference = 100% x ((RA-NA)/NA), where NA = National approach and RA = Reference approach).

[3] Emissions from biomass are not included.

Note: In addition to estimating CO_2 emissions from fuel combustion by sector, Parties should also estimate these emissions using the IPCC Reference approach, as found in the IPCC Guidelines, Worksheet 1-1(Volume 2. Workbook). The Reference approach is to assist in verifying the sectoral data. Parties should also complete the above tables to compare the alternative estimates, and if the emission estimates lie more than 2 percent apart, should explain the source of this difference in the documentation box provided.

Documentation Box:

This comparison as programmed in the CRF is not suitable for the Canadian Inventory since our national approach does not include fossil fuel based CO_2 from various industrial processes such as ammonia and aluminum production. When these sources are included in the national approach's totals for energy, the two match quite closely. 476426.48 + 29705.01 = 506131.49 which represents a 4% difference.

TABLE 1.A(d) SECTORAL BACKGROUND DATA FOR ENERGY
Feedstocks and Non-Energy Use of Fuels
(Sheet 1 of 1)

Canada
1998
Submission 2000

FUEL TYPE [1]	ACTIVITY DATA AND RELATED INFORMATION		IMPLIED EMISSION FACTOR	ESTIMATE
	Fuel quantity (TJ)	Fraction of carbon stored	Carbon emission factor (t C/TJ)	of carbon stored in non-energy use of fuels (Gg C)
Naphtha [2]	4,306.56	0.80	20.00	68.90
Lubricants	40,017.32	0.50	20.00	400.17
Bitumen	131,594.82	1.00	22.00	2,895.09
Coal Oils and Tars (from Coking Coal)	0.00	0.75	0.00	0.00
Natural Gas[2]	181,597.36	0.33	15.30	916.89
Gas/Diesel Oil [2]	0.00	0.50	0.00	0.00
LPG [2]	14,281.04	0.80	17.20	196.51
Butane [2]	4,300.16	0.80	17.20	59.17
Ethane [2]	108,292.50	0.80	16.80	1,455.45
Other *(please specify)*				
Other Products	39,675.97	0.21	20.00	166.64
Refinery Feedstocks	110,763.59	0.80	20.00	1,772.22
Total	634,829.32		0.00	7,931.03

Additional information [a]

CO_2 not emitted (Gg CO_2)	Subtracted from energy sector *(specify source category)*
252.65	
1,467.30	
10,615.32	
0.00	
3,361.91	
0.00	
720.53	
216.96	
5,336.65	
611.01	
6,498.13	
29,080.46	

[1] Where fuels are used in different industries, please enter in different rows.
[2] Enter these fuels when they are used as feedstocks.

[a] The fuel lines continue from the table to the left.

Note: The table is consistent with the IPCC Guidelines. Parties that take into account the emissions associated with the use and disposal of these feedstocks could continue to use their methodology, and provide explanation notes in the documentation box below.

Documentation box: A fraction of energy carriers is stored in such products as plastics or asphalt. The non-stored fraction of the carbon in the energy carrier or product is oxidized, resulting in carbon dioxide emissions, either during the use of the energy carriers in the industrial production (e.g. fertilizer production), or during the use of the products (e.g. solvents, lubricants), or in both (e.g. monomers). To report associated emissions use the above table, filling an extra "Additional information" table, as shown below.

Associated CO_2 emissions (Gg)	Allocated under *(Specify source category)* [a]

[a] e.g. Industrial Processes, Waste Incineration, etc.

TABLE 1.B.1 SECTORAL BACKGROUND DATA FOR ENERGY

Fugitive Emissions from Solid Fuels

(Sheet 1 of 1)

Canada
1998
Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA	IMPLIED EMISSION FACTOR		EMISSIONS	
	Amount of fuel produced [1] (Mt)	CH_4 (kg/t)	CO_2 (kg/t)	CH_4 (Gg)	CO_2 (Gg)
1. B. 1. a. Coal Mining and Handling	95.36			64.96	0.00
i. Underground Mines[2]	3.91	7.70	0.00	30.12	0.00
Mining Activities		7.70	#VALUE!	30.12	NE
Post-Mining Activities		#VALUE!	#VALUE!	IE	NE
ii. Surface Mines[2]	91.45	0.38	0.00	34.84	0.00
Mining Activities		0.38	#VALUE!	34.84	NE
Post-Mining Activities		#VALUE!	#VALUE!	IE	NE
1. B. 1. b. Solid Fuel Transformation	NI	0.00	0.00	NI	NI
1. B. 1. c. Other *(please specify)* [3]				0.00	0.00
	NI	0.00	0.00	NI	NI

Additional information [a]

Description	Value
Amount of CH_4 drained (recovered) and utilized or flared (Gg)	NA
Number of active underground mines	NA
Number of mines with drainage (recovery) systems	NA

[a] For underground mines.

[1] Use the documentation box to specify whether the fuel amount is based on the run-of-mine (ROM) production or on the saleable production.

[2] Emissions both for Mining Activities and Post-Mining Activities are calculated with the activity data in lines Underground Mines and Surface Mines respectively.

[3] Please click on the button to enter any other solid fuel related activities resulting in fugitive emissions, such as emissions from abandoned mines and waste piles.

Note: There are no clear references to the coverage of 1.B.1.b. and 1.B.1.c. in the IPCC Guidelines. Make sure that the emissions entered here are not reported elsewhere. If they are reported under another source category, indicate this (IE) and make a reference in Table 9 (completeness) and/or in the documentation box.

Documentation box:

[1] Refer to National Inventory Report for detailed methodologies and activity data.

[2] **ONLY Implied Emission Factors** were caluclated using Underground Mines and Surface Mines activity data, **NOT CH_4 and CO_2 emissions**

TABLE 1.B.2 SECTORAL BACKGROUND DATA FOR ENERGY
Fugitive Emissions from Oil and Natural Gas
(Sheet 1 of 1)

Canada
1998
Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA			IMPLIED EMISSION FACTORS			EMISSIONS		
	Description [1]	Unit	Value	CO_2 *(kg/unit)* [2]	CH_4 *(kg/unit)* [2]	N_2O *(kg/unit)* [2]	CO_2 (Gg)	CH_4 (Gg)	N_2O (Gg)
1. B. 2. a. Oil [3]							**39.13**	**662.50**	
i. Exploration	IE	IE	IE	0.00	0.00		IE	IE	
ii. Production [4]	Conventional, heavy Oil and C	10^3 m^3	99,210.10	393.21	6,661.10		39.01	660.85	
iii. Transport	Liquid Product Transport	NA	NA	0.00	0.00		0.12	1.65	
iv. Refining / Storage	NE	NE	NE	0.00	0.00		NE	NE	
v. Distribution of oil products	NE	NE	NE	0.00	0.00		NE	NE	
vi. Other				0.00	0.00				
1. B. 2. b. Natural Gas							**27.08**	**1,082.87**	
Exploration	NA	NA	NA	0.00	0.00		0.13	13.50	
i. Production [4] / Processing	Gross production and net withd	10^6 m^3	391,305.80	64.09	1,707.30		25.08	668.08	
ii. Transmission	Pipeline distance	km	77,311.00	24.19	3,240.11		1.87	250.50	
Distribution	Pipeline Distribution Length - I	km	202,655.10	#VALUE!	744.09		NA	150.79	
iii. Other Leakage	NA	NA	NA	0.00	0.00		NA	NA	
at industrial plants and power stations				0.00	0.00				
in residential and commercial sectors				0.00	0.00				
1. B. 2. c. Venting [5]							**7,170.89**	**0.00**	
i. Oil	NA	NA	NA	0.00	0.00		NA	NA	
ii. Gas	Withdrawls of Natural Gas	10^6 m^3	187,814.30	38,180.75	#VALUE!		7,170.89	NA	
iii. Combined	NA	NA	NA	0.00	0.00		NA	NA	
Flaring							**6,549.75**	**28.92**	**0.00**
i. Oil	NA	NA	NA	0.00	0.00	0.00	NA	NA	NA
ii. Gas	NA	NA	NA	0.00	0.00	0.00	NA	NA	NA
iii. Combined	Natural Gas & Oil Production	10^6 m^3	203,491.50	32,186.85	142.10	#VALUE!	6,549.75	28.92	NA
1.B.2.d. Other *(please specify)* [6]							**0.00**	**0.00**	**0.00**
				0.00	0.00	0.00			

Additional information

Description	Value	Unit
Pipelines length (km)	NA	NA
Number of oil wells	NA	NA
Number of gas wells	NA	NA
Gas throughput [a]	NA	NA
Oil throughput [a]	NA	NA
Other relevant information *(specify)*	NA	NA

[a] In the context of oil and gas production, throughput is a measure of the total production, such as barrels per day of oil, or cubic meters of gas per year. Specify the units of the reported value in the unit column. Take into account that these values should be consistent with the activity data reported under the production rows of the main table.

[1] Specify the activity data used and fill in the activity data description column, as given in the examples in brackets. Specify the unit of the activity data in the unit column. Use the document box to specify whether the fuel amount is based on the raw material production or on the saleable production. Note cases where more than one variable is used as activity data.

[2] The unit of the implied emission factor will depend on the units of the activity data used, and is therefore not specified in this column. The unit of the implied emission factor for each activity will be kg/unit of activity data.

[3] Use the category also to cover emissions from combined oil and gas production fields. Natural gas processing and distribution from these fields should be included under 1.B.2.b.ii and 1.B.2.b.iii, respectively.

[4] If using default emission factors these categories will include emissions from production other than venting and flaring.

[5] If using default emission factors, emissions from Venting and Flaring from all oil and gas production should be accounted for here. Parties using the IPCC software could report those emissions together, indicating so in the documentation box.

[6] For example, fugitive CO_2 emissions from production of geothermal power could be reported here.

Documentation box:

[1] Refer to National Inventory Report for detailed methodologies and activity data.

TABLE 1.C SECTORAL BACKGROUND DATA FOR ENERGY
International Bunkers and Multilateral Operations
(Sheet 1 of 1)

Canada
1998
Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA	IMPLIED EMISSION FACTORS			EMISSIONS		
	Consumption (TJ)	CO_2 (t/TJ)	CH_4 (kg/TJ)	N_2O (kg/TJ)	CO_2 (Gg)	CH_4 (Gg)	N_2O (Gg)
Marine Bunkers	**51,376.77**				**3,776.00**	**0.05**	**0.55**
Gasoline	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Gas/Diesel Oil	8,165.35	70.58	6.72	10.34	576.30	0.05	0.08
Residual Fuel Oil	43,211.42	74.05	0.00	10.78	3,199.70	0.00	0.47
Lubricants		0.00	0.00	0.00	NO	NO	NO
Coal		0.00	0.00	0.00	NO	NO	NO
Other *(please specify)*	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00			
Aviation Bunkers	**41,061.38**				**2,878.90**	**0.09**	**0.28**
Jet Kerosene	41,014.45	70.11	2.09	6.87	2,875.64	0.09	0.28
Gasoline	46.93	69.47	60.66	6.37	3.26	0.00	0.00
Multilateral Operations [1]							

Additional information

Fuel consumption	Allocation [a] (percent)	
	Domestic	International
Marine	56.56	43.44
Aviation	81.38	18.62

[a] For calculating the allocation of fuel consumption, use the sums of fuel consumption by domestic navigation and aviation (Table 1.A(a)) and by international bunkers (Table 1.C).

[1] Parties may choose to report or not report the activity data and emission factors for multilateral operation consistent with the principle of confidentiality stated in the UNFCCC reporting guidelines on inventories. In any case, Parties should report the emissions from multilateral operations, where available, under the Memo Items section of the Summary tables and in the Sectoral report table for energy.

Note: In accordance with the IPCC Guidelines, international aviation and marine bunker fuel emissions from fuel sold to ships or aircraft engaged in international transport should be excluded from national totals and reported separately for informational purposes only.

Documentation box: Please explain how the consumption of international marine and aviation bunkers fuels was estimated and separated from the domestic consumption.

TABLE 2(I) SECTORAL REPORT FOR INDUSTRIAL PROCESSES
(Sheet 1 of 2)

Canada
1998
Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO_2	CH_4	N_2O	$HFCs^{(1)}$		$PFCs^{(1)}$		SF_6		NO_x	CO	NMVOC	SO_2
				P	A	P	A	P	A				
	(Gg)			CO_2 equivalent (Gg)				(Gg)					
Total Industrial Processes	**38,065.75**	**0.00**	**18.83**	**1,023.13**	**864.07**	**0.00**	**6,023.17**	**0.00**	**0.06**	**0.00**	**0.00**	**0.00**	**0.00**
A. Mineral Products	**8,360.74**	**0.00**	**0.00**							**0.00**	**0.00**	**0.00**	**0.00**
1. Cement Production	6,032.00												NE
2. Lime Production	1,985.74												
3. Limestone and Dolomite Use	279.00												
4. Soda Ash Production and Use	64.00												
5. Asphalt Roofing	NE										NE	NE	
6. Road Paving with Asphalt	NE									NE	NE	NE	NE
7. Other *(please specify)*	0.00	0.00	0.00							0.00	0.00	0.00	0.00
B. Chemical Industry	**3,898.29**	**0.00**	**18.83**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
1. Ammonia Production	3,898.29	NE								NE	NE	NE	NE
2. Nitric Acid Production			2.49							NE			
3. Adipic Acid Production			16.34							NE	NE	NE	
4. Carbide Production	0.00	0.00									NE	NE	NE
5. Other *(please specify)*	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C. Metal Production	**12,133.11**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**6,023.17**	**0.00**	**0.06**	**0.00**	**0.00**	**0.00**	**0.00**
1. Iron and Steel Production	8,315.69	0.00								NE	NE	NE	NE
2. Ferroalloys Production	IE	NE								NE	NE	NE	NE
3. Aluminium Production	3,817.42	NE					6,023.17			NE	NE	NE	NE
4. SF_6 Used in Aluminium and Magnesium Foundries									0.06				
5. Other *(please specify)*	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

P = Potential emissions based on Tier 1 approach of the IPCC Guidelines. A = Actual emissions based on Tier 2 approach of the IPCC Guidelines. This only applies in sectors where methods exist for both tiers.

(1) The emissions of HFCs and PFCs are to be expressed as CO_2 equivalent emissions. Data on disaggregated emissions of HFCs and PFCs are to be provided in Table 2(II) of this common reporting format.

TABLE 2(I) SECTORAL REPORT FOR INDUSTRIAL PROCESSES
(Sheet 2 of 2)

Canada
1998
Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO_2	CH_4	N_2O	$HFCs^{(1)}$		$PFCs^{(1)}$		SF_6		NO_x	CO	NMVOC	SO_2
				P	A	P	A	P	A				
	(Gg)			CO_2 equivalent (Gg)				(Gg)					
D. Other Production	**IE**									**0.00**	**0.00**	**0.00**	**0.00**
1. Pulp and Paper										NE	NE	NE	NE
2. Food and Drink[2]	IE											NE	
E. Production of Halocarbons and SF_6					**0.00**		**0.00**		**0.00**				
1. By-product Emissions					0.00		0.00		0.00				
Production of HCFC-22					0.00								
Other					0.00		0.00		0.00				
2. Fugitive Emissions					0.00		0.00		0.00				
3. Other *(please specify)*					0.00		0.00		0.00				
F. Consumption of Halocarbons and SF_6				**1,023.13**	**864.07**	**0.00**	**0.00**	**0.00**	**0.00**				
1. Refrigeration and Air Conditioning Equipment				677.64	633.03	0.00	0.00	0.00	0.00				
2. Foam Blowing				41.27	34.73	0.00	0.00	0.00	0.00				
3. Fire Extinguishers				36.75	14.91	0.00	0.00	0.00	0.00				
4. Aerosols/ Metered Dose Inhalers				266.28	180.48	0.00	0.00	0.00	0.00				
5. Solvents				1.20	0.91	0.00	0.00	0.00	0.00				
6. Semiconductor Manufacture				IE	0.00	0.00	0.00	0.00	0.00				
7. Electrical Equipment				IE	IE	0.00	0.00	NE	0.00				
8. Other *(please specify)*				0.00	0.00	0.00	0.00	0.00	0.00				
G. Other *(please specify)*	**13,673.61**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

[2] CO_2 from Food and Drink Production (e.g. gasification of water) can be of biogenic or non-biogenic origin. Only information on CO_2 emissions of non-biogenic origin should be reported.

TABLE 2(I).A-G SECTORAL BACKGROUND DATA FOR INDUSTRIAL PROCESSES

Canada

Emissions of CO_2, CH_4 and N_2O

1998

(Sheet 1 of 2)

Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA		IMPLIED EMISSION FACTORS			EMISSIONS[2]					
	Production/Consumption quantity		CO_2	CH_4	N_2O	CO_2		CH_4		N_2O	
	Description [1]	(kt)	(t/t)	(t/t)	(t/t)	(Gg)	[2]	(Gg)	[2]	(Gg)	[2]
A. Mineral Products						**8,360.74**		**0.00**		**0.00**	
1. Cement Production	Cement Production Data	12,064.00	0.50			6,032.00					
2. Lime Production	Lime Production Data	2,513.60	0.79			1,985.74					
3. Limestone and Dolomite Use	Limestone Production Data	490.00	0.57			279.00					
4. Soda Ash						64.00					
Soda Ash Production	NO	NO	0.00			NO					
Soda Ash Use	Soda Ash Use Data for Glass Industri	154.00	0.42			64.00					
5. Asphalt Roofing	NE	NE	0.00			NE					
6. Road Paving with Asphalt	NE	NE	0.00			NE					
7. Other *(please specify)*						0.00		0.00		0.00	
Glass Production			0.00			NE					
			0.00	0.00	0.00						
B. Chemical Industry						**3,898.29**		**0.00**		**18.83**	
1. Ammonia Production [3]	Anhydrous Ammonica Production	4,737.00	0.82	#VALUE!	#VALUE!	3,898.29	2,711.43	NE		NE	
2. Nitric Acid Production	Nitric Acid Production	935.42			0.00					2.49	
3. Adipic Acid Production	Point Source Nitrous Oxide Data	NA			0.00					16.34	
4. Carbide Production			0.00	0.00		0.00		0.00			
Silicon Carbide			0.00	0.00		IE		NE			
Calcium Carbide			0.00	0.00		IE		NE			
5. Other *(please specify)*						0.00		0.00		0.00	
Carbon Black				0.00				NE			
Ethylene			0.00	0.00	0.00	IE		NE		NE	
Dichloroethylene				0.00				NE			
Styrene				0.00				NE			
Methanol				0.00				NE			
			0.00	0.00	0.00						

[1] Where the IPCC Guidelines provide options for activity data, e.g. cement or clinker for estimating the emissions from Cement Production, specify the activity data used (as shown in the example in brackets) in order to make the choice of emission factor more transparent and to facilitate comparisons of implied emission factors.

[2] Enter cases in which the final emissions are reduced with the quantities of emission recovery, oxidation, destruction, transformation. Adjusted emissions are reported and the quantitative information on recovery, oxidation, destruction, and transformation should be given in the additional columns provided.

[3] To avoid double counting make offsetting deductions from fuel consumption (e.g. natural gas) in Ammonia Production, first for feedstock use of the fuel, and then to a sequestering use of the feedstock.

TABLE 2(I).A-G SECTORAL BACKGROUND DATA FOR INDUSTRIAL PROCESSES

Canada

Emissions of CO_2, CH_4 and N_2O

1998

(Sheet 2 of 2)

Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA		IMPLIED EMISSION FACTORS			EMISSIONS[2]					
	Production/Consumption Quantity		CO_2	CH_4	N_2O	CO_2		CH_4		N_2O	
	Description [1]	(kt)	(t/t)	(t/t)	(t/t)	(Gg)	[2]	(Gg)	[2]	(Gg)	[2]
C. Metal Production [4]						**12,133.11**		**0.00**		**0.00**	
1. Iron and Steel Production	NA	NA	0.00			8,315.69		0.00			
Steel	NA	NA	0.00			NA					
Pig Iron	NA	NA	0.00	0.00		NA		NA			
Sinter	NA	NA	0.00	0.00		NA		NA			
Coke	Secondary Coke Consumptior	3,353.00	2.48	#VALUE!		8,315.69		NE			
Other *(please specify)*						0.00		0.00			
			0.00	0.00	0.00						
2. Ferroalloys Production	NA	NA	0.00	0.00		IE		NE			
3. Aluminium Production	Alluminum Production	2,339.32	1.63	#VALUE!		3,817.42		NE			
4. SF_6 Used in Aluminium and Magnesium Foundries											
5. Other *(please specify)*						0.00		0.00		0.00	
			0.00	0.00	0.00						
D. Other Production						**0.00**					
1. Pulp and Paper											
2. Food and Drink			0.00			IE					
G. Other *(please specify)*						**13,673.61**		**0.00**		**0.00**	
Other & Undifferentiated Production	Non Energy Use of Primary a	NA	0.00	0.00	0.00	13,673.61		NE		NE	

[4] More specific information (e.g. data on virgin and recycled steel production) could be provided in the documentation box.

Note: In case of confidentiality of the activity data information, the entries should provide aggregate figures but there should be a note in the documentation box indicating this.

Documentation box:

Table 2(I).A-G Sectorial Background Data for Industrial Processes

B. Chemical Industry - 1. Ammonia Production: [2] Quantity reduced due to trap urea

TABLE 2(II) SECTORAL REPORT FOR INDUSTRIAL PROCESSES - EMISSIONS OF HFCs, PFCs AND SF_6
(Sheet 1 of 2)

Canada
1998
Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	HFC-23	HFC-32	HFC-41	HFC-43-10mee	HFC-125	HFC-134	HFC-134a	HFC-152a	HFC-143	HFC-143a	HFC-227ea	HFC-236fa	HFC-245ca	Total HFCs[1]	CF_4	C_2F_6	C_3F_8	C_4F_{10}	$c\text{-}C_4F_8$	C_5F_{12}	C_6F_{14}	Total PFCs[1]	SF_6
	(t)[2]																						
Total Actual Emissions of Halocarbons (by chemical) and SF_6	**2.70**	**0.04**	**0.00**	**0.00**	**52.72**	**0.00**	**405.62**	**40.95**	**0.00**	**37.13**	**3.69**	**0.00**	**0.00**		**827.65**	**69.94**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		**64.28**
C. Metal Production															**827.65**	**69.94**	NA	NA	NA	NA	NA		**64.28**
Aluminium Production															827.65	69.94	NA	NA	NA	NA	NA		
SF_6 Used in Aluminium Foundries																							NE
SF_6 Used in Magnesium Foundries																							64.28
E. Production of Halocarbons and SF_6	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**
1. By-product Emissions	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
Production of HCFC-22	NO																						
Other	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA		NA
2. Fugitive Emissions	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA		NA
3. Other *(please specify)*	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
F(a). Consumption of Halocarbons and SF_6 (actual emissions - Tier 2)	**2.70**	**0.04**	**0.00**	**0.00**	**52.72**	**0.00**	**405.62**	**40.95**	**0.00**	**37.13**	**3.69**	**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**
1. Refrigeration and Air Conditioning Equipment	0.20	0.04	0.00	0.00	51.23	0.00	266.05	1.54	0.00	37.13	0.00	0.00	0.00		NE	NE	NE	NE	NE	NE	NE		NA
2. Foam Blowing	2.50	0.00	0.00	0.00	0.00	0.00	4.24	0.00	0.00	0.00	0.00	0.00	0.00		NE	NE	NE	NE	NE	NE	NE		NA
3. Fire Extinguishers	0.00	0.00	0.00	0.00	1.49	0.00	0.00	0.36	0.00	0.00	3.69	0.00	0.00		NE	NE	NE	NE	NE	NE	NE		0.00
4. Aerosols/Metered Dose Inhalers	0.00	0.00	0.00	0.00	0.00	0.00	134.91	36.40	0.00	0.00	0.00	0.00	0.00		NE	NE	NE	NE	NE	NE	NE		0.00
5. Solvents	0.00	0.00	0.00	0.00	0.00	0.00	0.42	2.66	0.00	0.00	0.00	0.00	0.00		NE	NE	NE	NE	NE	NE	NE		0.00
6. Semiconductor Manufacture	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE	IE		NE	NE	NE	NE	NE	NE	NE		NE
7. Electrical Equipment																							NE
8. Other *(please specify)*	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
G. Other *(please specify)*	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**

[1] Although shaded, the columns with HFCs and PFCs totals on sheet 1 are kept for consistency with sheet 2 of the table.

[2] Note that the units used in this table differ from those used in the rest of the Sectoral report tables, i.e. [t] instead of [Gg].

Note: Where information is confidential the entries should provide aggregate figures but there should be a note indicating this in the relevant documentation boxes of the Sectoral background data tables or as a comment to the corresponding cell.
Gases with GWP not yet agreed upon by the COP, should be reported in Table 9 (Completeness), sheet 2.

TABLE 2(II) SECTORAL REPORT FOR INDUSTRIAL PROCESSES - EMISSIONS OF HFCs, PFCs AND SF_6
(Sheet 2 of 2)

Canada
1998
Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	HFC-23	HFC-32	HFC-41	HFC-43-10mee	HFC-125	HFC-134	HFC-134a	HFC-152a	HFC-143	HFC-143a	HFC-227ea	HFC-236fa	HFC-245ca	Total HFCs	CF_4	C_2F_6	C_3F_8	C_4F_{10}	c-C_4F_8	C_5F_{12}	C_6F_{14}	Total PFCs	SF_6
	(t)[2]																						
F(p). Total Potential Emissions of Halocarbons (by chemical) and SF_6 [3]	**2.50**	**0.15**	**0.00**	**0.00**	**7.42**	**0.00**	**710.72**	**47.64**	**0.00**	**3.33**	**10.25**	**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**
Production[4]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
Import:	2.50	0.15	0.00	0.00	7.83	0.00	2,793.08	47.64	0.00	3.81	10.25	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
In bulk	2.50	0.15	0.00	0.00	7.83	0.00	2,793.08	47.64	0.00	3.81	10.25	0.00	0.00		NE	NE	NE	NE	NE	NE	NE		NE
In products [5]	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE		NE	NE	NE	NE	NE	NE	NE		NE
Export:	0.00	0.00	0.00	0.00	0.41	0.00	2,082.37	0.00	0.00	0.48	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
In bulk	0.00	0.00	0.00	0.00	0.41	0.00	2,082.37	0.00	0.00	0.48	0.00	0.00	0.00		NE	NE	NE	NE	NE	NE	NE		0.00
In products [5]	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE		NE	NE	NE	NE	NE	NE	NE		0.00
Destroyed amount	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
GWP values used	**11700**	**650**	**150**	**1300**	**2800**	**1000**	**1300**	**140**	**300**	**3800**	**2900**	**6300**	**560**		**6500**	**9200**	**7000**	**7000**	**8700**	**7500**	**7400**		**23900**
Total Actual Emissions [6] (Gg CO_2 eq.)	**31.61**	**0.02**	**0.00**	**0.00**	**147.62**	**0.00**	**527.30**	**5.73**	**0.00**	**141.08**	**10.69**	**0.00**	**0.00**	**864.07**	**5,379.73**	**643.45**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**6,023.17**	**1,536.21**
C. Metal Production															5,379.73	643.45	NA	NA	NA	NA	NA	6,023.17	1,536.21
E. Production of Halocarbons and SF_6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
F(a). Consumption of Halocarbons and SF_6	31.61	0.02	0.00	0.00	147.62	0.00	527.30	5.73	0.00	141.08	10.69	0.00	0.00	864.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
G. Other	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ratio of Potential/Actual Emissions from Consumption of Halocarbons and SF_6																							
Actual emissions - F(a) (Gg CO_2 eq.)	31.61	0.02	0.00	0.00	147.62	0.00	527.30	5.73	0.00	141.08	10.69	0.00	0.00	864.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Potential emissions - F(p) (7) (Gg CO_2 eq.)	29.27	0.10	0.00	0.00	20.79	0.00	923.93	6.67	0.00	12.66	29.72	0.00	0.00	1,023.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Potential/Actual emissions ratio	0.93	4.11	0.00	0.00	0.14	0.00	1.75	1.16	0.00	0.09	2.78	0.00	0.00	1.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

[3] Potential emissions of each chemical of halocarbons and SF6 estimated using Tier 1a or Tier 1b of the IPCC Guidelines (Volume 3. Reference Manual, pp. 2.47-2.50). When potential emissions estimates are available in a disaggregated manner corresponding to the subsectors for actual emissions defined on sheet 1 of this table, these should be reported in an annex to sheet 2, using the format of sheet 1, sector F(a). Use Summary 3 of this common reporting format to indicate whether Tier 1a or Tier 1b was used.

[4] Production refers to production of new chemicals. Recycled substances could be included here, but it should be ensured that double counting of emissions is avoided. Relevant explanations should be provided as a comment to the corresponding cell.

[5] Relevant just for Tier 1b.

[6] Sums of the actual emissions of each chemical of halocarbons and SF6 from the source categories given in sheet 1 of the table multiplied by the corresponding GWP values.

[7] Potential emissions of each chemical of halocarbons and SF6 taken from row F(p) multiplied by the corresponding GWP values.

Note: As stated in the revised UNFCCC guidelines, Parties should report actual emissions of HFCs, PFCs and SF_6, where data are available, providing disaggregated data by chemical and source category in units of mass and in CO_2 equivalents. Parties reporting actual emissions should also report potential emissions for the sources where the concept of potential emissions applies, for reasons of transparency and comparability.

TABLE 2(II). C, E SECTORAL BACKGROUND DATA FOR INDUSTRIAL PROCESSES
Metal Production; Production of Halocarbons and SF_6
(Sheet 1 of 1)

Canada
1998
Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA		IMPLIED EMISSION FACTORS[2]	EMISSIONS[2]	
	Description [1]	(t)	(kg/t)	(t)	[3]
C. PFCs and SF_6 from Metal Production					
PFCs from Aluminium Production					
CF_4	Alluminum Production Data	2,339,325.00	0.35	827.65	NA
C_2F_6	Alluminum Production Data	2,339,325.00	0.03	69.94	NA
SF_6				64.28	NA
Aluminium Foundries	*NA*	NA	0.00	NE	NA
Magnesium Foundries	Point Source SF_6 Data from Magnesium Foundries	NA	0.00	64.28	NA
E. Production of Halocarbons and SF_6					
1. By-product Emissions					
Production of HCFC-22					
HFC-23	NO	NO	0.00	NO	NO
Other *(specify chemical)*					
			0.00		
2. Fugitive Emissions					
HFCs *(specify chemical)*					
			0.00		
PFCs *(specify chemical)*					
			0.00		
SF_6			0.00		
3. Other *(please specify)*					
			0.00		

[1] Specify the activity data used as shown in the examples within brackets. Where applying Tier 1b (for C), Tier 2 (for E) and country specific methods, specify any other relevant activity data used in the documentation box below.

[2] Emissions and implied emission factors are after recovery.

[3] Enter cases in which the final emissions are reported after subtracting the quantities of emission recovery, oxidation, destruction, transformation. Enter these quantities in the specified column and use the documentation box for further explanations.

Note: Where the activity data are confidential, the entries should provide aggregate figures, but there should be a note in the documentation box indicating this.

Documentation box:

Table 2(II) Sectoral Report for Industrial Processes - Emissions of HFCs, PFCs, and SF_6.

Consumption of HFCs were estimated for 1995 to 1998, assumed that there were no HFCs used prior to 1995.
Refer to the National Inventory Report for HFCs emission estimate methodology. HFC consumption data for 1998 are not yet available, therefore assumed constant 1997 HFC consumption.

Table 2(II). C,E Setoral Background Data for Industrial Porcesses

[1] Refer to the National Inventory Report for specific methods, assumptions, and relevant sources of activity data.

[2] Emissions were not recovered, but were estimated based on production and technology type.

TABLE 2(II).F SECTORAL BACKGROUND DATA FOR INDUSTRIAL PROCESSES Canada
Consumption of Halocarbons and SF_6 1998
(Sheet 1 of 2) Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA *Amount of fluid*			IMPLIED EMISSION FACTORS			EMISSIONS		
	Filled in new manufactured products	In operating systems (average annual stocks)	Remained in products at decommissioning [1]	Product manufacturing factor	Product life factor	Disposal loss factor	From manufacturing	From stocks	From disposal
	(t)			(% per annum)			(t)		
1 Refrigeration									
Air Conditioning Equipment									
Domestic Refrigeration *(Specify chemical)* [2]									
(e.g. HFC-32)	NA	NA	NA	NA	NA	NA	NA	NA	NA
(e.g. HFC-125)	NA	NA	NA	NA	NA	NA	NA	NA	NA
(e.g. HFC-134a)	NA	NA	NA	NA	NA	NA	NA	NA	NA
(e.g. HFC-152a)	NA	NA	NA	NA	NA	NA	NA	NA	NA
(e.g. HFC-143a)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Commercial Refrigeration									
Transport Refrigeration									
Industrial Refrigeration									
Stationary Air-Conditioning									
Mobile Air-Conditioning									
2 Foam Blowing									
Hard Foam									
Soft Foam									

[1] Parties should use the documentation box to provide information on the amount of the chemical recovered (recovery efficiency) and other relavant information used in the emission estimation.

[2] Please click on the button to specify the chemical consumed, as given in the example. If needed, new rows could be added for reporting the disagregated chemicals from a source by clicking on the corresponding button.

Note: Table 2.(II).F provides for reporting of the activity data and emission factors used to calculate actual emissions from consumption of halocarbons and SF6 using the "bottom-up approach" (based on the total stock of equipment and estimated emission rates from this equipment). Some Parties may prefer to estimate their actual emissions following the alternative "top-down approach" (based on annual sales of equipment and/or gas). These Parties should provide the activity data used in the current format and any other relevant information in the documentation box at the end of Table2(II)Fs2. Data these Parties should provide includes (1) the amount of fluid used to fill new products, (2) the amount of fluid used to service existing products, (3) the amount of fluid originally used to fill retiring products (the total nameplate capacity of retiring products), (4) the product lifetime, and (5) the growth rate of product sales, if this has been used to calculate the amount of fluid originally used to fill retiring products. Alternatively, Parties may provide alternative formats with equivalent information. These formats may be considered for future versions of the common reporting format after the trial period.

TABLE 2(II).F SECTORAL BACKGROUND DATA FOR INDUSTRIAL PROCESSES Canada

Consumption of Halocarbons and SF_6 1998

(Sheet 2 of 2) Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA *Amount of fluid*			IMPLIED EMISSION FACTORS			EMISSIONS		
	Filled in new manufactured products	In operating systems (average annual stocks)	Remained in products at decommissioning [1]	Product manufacturing factor	Product life factor	Disposal loss factor	From manufacturing	From stocks	From disposal
	(t)			(% per annum)			(t)		
3 Fire Extinguishers									
4 Aerosols									
Metered Dose Inhalers									
Other									
5 Solvents									
6 Semiconductors									
7 Electric Equipment									
8 Other *(please specify)*									

Note: Where the activity data are confidential, the entries should provide aggregate figures, but there should be a note indicating this and explanations in the documentation box.

Documentation box:

Table 2(II).F Sectoral Background Data for Industrial Processes - Consumption of Halocarbons and SF6

Refer to National Inventory Report for HFC methodologies and activity data sources for 1995 to 1998.

TABLE 3 SECTORAL REPORT FOR SOLVENT AND OTHER PRODUCT USE
(Sheet 1 of 1)

Canada
1998
Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO_2	N_2O	NMVOC
	(Gg)		
Total Solvent and Other Product Use	**0.00**	**1.47**	**0.00**
A. Paint Application	**NA**	**NA**	**NE**
B. Degreasing and Dry Cleaning	**NA**	**NA**	**NE**
C. Chemical Products, Manufacture and Processing			**NE**
D. Other *(please specify)*	0.00	1.47	0.00
Use of N_2O for Anaesthesia		1.40	NE
N_2O - Propellant Usage		0.07	NE

Please account for the quantity of carbon released in the form of NMVOC in both the NMVOC and the CO_2 columns.

Note: The IPCC Guidelines do not provide methodologies for the calculation of emissions of N_2O from Solvent and Other Product Use. If reporting such data, Parties should provide additional information (activity data and emission factors) used to make these estimates in the documentation box to Table 3.A-D.

TABLE 3.A-D SECTORAL BACKGROUND DATA FOR SOLVENT AND OTHER PRODUCT USE
(Sheet 1 of 1)

Canada
1998
Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA		IMPLIED EMISSION FACTORS	
	Description		CO_2 (t/t)	N_2O (t/t)
A. Paint Application	NA	**NA**	**0.00**	**0.00**
B. Degreasing and Dry Cleaning	NA	**NA**	**0.00**	**0.00**
C. Chemical Products, Manufacture and Processing				
D. Other *(please specify)* [1]				
Use of N_2O for Anaesthesia	Population Data	30,330,422.00	0.00	0.00
N_2O - Propellant Usage	Population Data	30,330,422.00	0.00	0.00
			0.00	0.00
			0.00	0.00

[1] Some probable sources are provided in brackets. Complement the list with other relevant sources. Make sure that the order is the same as in Table 3.

Note: The table follows the format of the IPCC Sectoral Report for Solvent and Other Product Use, although some of the source categories are not relevant to the direct GHG emissions.

Documentation box:
D. Other - Use of N_2O for Anaesthesia and Propellant - used population activitiy data

TABLE 4 SECTORAL REPORT FOR AGRICULTURE
(Sheet 1 of 2)

Canada
1998
Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CH_4	N_2O	NO_x	CO	NMVOC
	(Gg)				
Total Agriculture	**1,097.33**	**147.04**	**0.00**	**0.00**	**0.00**
A. Enteric Fermentation	**855.43**				
1. Cattle	822.99				
Dairy Cattle	173.13				
Non-Dairy Cattle	649.86				
2. Buffalo	NE				
3. Sheep	5.84				
4. Goats	0.37				
5. Camels and Llamas	NO				
6. Horses	7.99				
7. Mules and Asses	0.00				
8. Swine	18.24				
9. Poultry	0.00				
10. Other *(please specify)*	0.00				
B. Manure Management	**241.90**	**16.26**			**0.00**
1. Cattle	74.75				
Dairy Cattle	62.78				
Non-Dairy Cattle	11.97				
2. Buffalo	NE				
3. Sheep	0.14				
4. Goats	0.00				
5. Camels and Llamas	NO				
6. Horses	0.00				
7. Mules and Asses	0.00				
8. Swine	121.63				
9. Poultry	45.38				

TABLE 4 SECTORAL REPORT FOR AGRICULTURE
(Sheet 2 of 2)

Canada
1998
Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CH_4	N_2O	NO_x	CO	NMVOC
	(Gg)				
B. Manure Management (continued)					
10. Anaerobic Lagoons		0.00			NE
11. Liquid Systems		0.39			NE
12. Solid Storage and Dry Lot		13.85			NE
13. Other *(please specify)*		2.02			0.00
Other Systems		2.02			NE
C. Rice Cultivation	0.00				**0.00**
1. Irrigated	0.00				NE
2. Rainfed	0.00				NE
3. Deep Water	0.00				NE
4. Other *(please specify)*	0.00				0.00
D. Agricultural Soils [(1)]	**0.00**	**130.78**			**0.00**
1. Direct Soil Emissions	NA	79.69			NE
2. Animal Production	NA	10.11			NE
3. Indirect Emissions	NA	40.98			NE
4. Other *(please specify)*	0.00	0.00			0.00
E. Prescribed Burning of Savannas	**0.00**	**0.00**	**NE**	**NE**	**NE**
F. Field Burning of Agricultural Residues	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
1 . Cereals	0.00	0.00	NE	NE	NE
2. Pulse	0.00	0.00	NE	NE	NE
3 . Tuber and Root	0.00	0.00	NE	NE	NE
4 . Sugar Cane	NO	NO	NE	NE	NE
5 . Other *(please specify)*	0.00	0.00	0.00	0.00	0.00
G. Other *(please specify)*	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

[(1)] See footnote 4 to Summary 1.A of this common reporting format. Parties which choose to report CO_2 emissions and removals from agricultural soils under 4.D. Agricultural Soils category of the sector Agriculture should indicate the amount [Gg] of these emissions or removals in the documentation box to Table 4.D. Additional information (activity data, implied emissions factors) should also be provided using the relevant documentation box to Table 4.D. This table is not modified for reporting the CO_2 emissions and removals for the sake of consistency with the IPCC tables (i.e. IPCC Sectoral Report for Agriculture).

Note: The IPCC Guidelines do not provide methodologies for the calculation of CH_4 emissions, CH_4 and N_2O removals from agricultural soils, or CO_2 emissions from savanna burning or agricultural residues burning. If you have reported such data, you should provide additional information (activity data and emission factors) used to make these estimates using the relevant documentation boxes of the Sectoral background data tables.

TABLE 4.A SECTORAL BACKGROUND DATA FOR AGRICULTURE
Enteric Fermentation
(Sheet 1 of 1)

Canada
1998
Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA[1] AND OTHER RELATED INFORMATION			IMPLIED EMISSION FACTORS
	Population size[2] (1000 head)	Average daily feed intake (MJ/day)	CH_4 conversion (%)	CH_4 (kg CH_4/head/yr)
1. Cattle	13,715	NA	NA	60.01
Dairy Cattle[3]	1,744	NA	NA	99.28
Non-Dairy Cattle	11,971	NA	NA	54.28
2. Buffalo	NE	NA	NA	0.00
3. Sheep	443	NA	NA	13.19
4. Goats	73	NA	NA	5.05
5. Camels and Llamas	NO	NA	NA	0.00
6. Horses	444	NA	NA	18.00
7. Mules and Asses	0	NA	NA	0.00
8. Swine	12,163	NA	NA	1.50
9. Poultry	581,761	NA	NA	0.00
10. Other *(please specify)*				
				0.00

Additional information (for Tier 2)[a]

Disaggregated list of animals [b] / Indicators:		Dairy Cattle	Non-Dairy Cattle	Other *(specify)*	
Weight	(kg)	NA	NA	NA	NA
Feeding situation [c]		NA	NA	NA	NA
Milk yield	(kg/day)	NA	NA	NA	NA
Work	(hrs/day)	NA	NA	NA	NA
Pregnant	(%)	NA	NA	NA	NA
Digestibility of feed	(%)	NA	NA	NA	NA

[a] Compare to Tables A-1 and A-2 of the IPCC Guidelines (Volume 3. Reference Manual, pp. 4.31-4.34). These data are relevant if Parties do not have data on average feed intake.

[b] Disaggregate to the split actually used. Add columns to the table if necessary.

[c] Specify feeding situation as pasture, stall fed, confined, open range, etc.

[1] In the documentation boxes to all Sectoral background data tables for Agriculture, Parties should provide information on whether the activity data is one year or a 3-year average.

[2] Parties are encouraged to provide detailed livestock population data by animal type and region in a separate table below the documentation box. This consistent set of animal population statistics should be used to estimate CH_4 emissions from enteric fermentation, CH_4 and N_2O from manure management, N_2O direct emissions from soil and N_2O emissions associated with manure production, as well as emissions from the use of manure as fuel, and sewage-related emissions reported in the waste sector.

[3] Including data on dairy heifers, if available.

Documentation box:

Used IPCC Tier 1 Enteric Fermentation Methodology - Refer to National Inventory Report for detailed methodologies

[1] Annual Activity Data: Cattle, Sheep, Swine & Poultry

[1] Census Activity Data (five year interval): Goats, Horses, Mules & Asses

[2] Refer to National Inventory Report for livestock population sources and methodologies

TABLE 4.B(a) SECTORAL BACKGROUND DATA FOR AGRICULTURE

CH_4 Emissions from Manure Management

(Sheet 1 of 1)

Canada
1998
Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA AND OTHER RELATED INFORMATION							IMPLIED EMISSION FACTORS
	Population size [1]	Allocation by climate region [2]			Typical animal mass	VS[3] daily excretion	CH_4 producing potential (Bo)[3]	CH_4
		Cool	Temperate	Warm				
	(1000 head)	(%)			(kg)	(kg dm/head/yr)	(CH_4 m^3/kg VS)	(kg CH_4/head/yr)
1. Cattle	13,715	100.0			NA	NA	NA	5.45
Dairy Cattle[4]	1,744	100.0			NA	NA	NA	36.00
Non-Dairy Cattle	11,971	100.0			NA	NA	NA	1.00
2. Buffalo	NE	100.0			NA	NA	NA	0.00
3. Sheep	443	100.0			NA	NA	NA	0.32
4. Goats	73	100.0			NA	NA	NA	0.00
5. Camels and Llamas	NO	100.0			NA	NA	NA	0.00
6. Horses	444	100.0			NA	NA	NA	0.00
7. Mules and Asses	0	100.0			NA	NA	NA	0.00
8. Swine	12,163	100.0			NA	NA	NA	10.00
9. Poultry	581,761	100.0			NA	NA	NA	0.08

[1] See footnote 1 to Table 4.A of this common reporting format.

[2] Climate regions are defined in terms of annual average temperature as follows: Cool=less than 15°C; Temperate=15°C to 25°C inclusive; and Warm=greater than 25°C (see Table 4.2 of the IPCC Guidelines (Volume 3, Reference Manual, p. 4.8)).

[3] VS=Volatile Solids; Bo=maximum methane producing capacity for manure IIPCC Guidelines (Volume 3, Reference Manual, p.4.23 and p. 4.15.

[4] Including data on diary heifers, if available.

Documentation Box:

IPCC default factors and method used assuming 100% cool climate - Refer to National Inventory Report for detailed methodologies.

[1] Annual Activity Data: Cattle, Sheep, Swine & Poultry

[1] Census Activity Data (five year interval): Goats, Horses, Mules & Asses

[3] Refer to National Inventory Report for livestock population sources and methodologies

Additional information (for Tier 2)

Animal category[a]	Indicator	Climate region	Animal waste management system					
			Anaerobic lagoon	Liquid system	Daily spread	Solid storage and dry lot	Pasture range paddock	Other
Dairy Cattle	Allocation(%)	Cool	NA	NA	NA	NA	NA	NA
		Temperate	NA	NA	NA	NA	NA	NA
		Warm	NA	NA	NA	NA	NA	NA
	MCF[b]	Cool	NA	NA	NA	NA	NA	NA
		Temperate	NA	NA	NA	NA	NA	NA
		Warm	NA	NA	NA	NA	NA	NA
Non-Dairy Cattle	Allocation(%)	Cool	NA	NA	NA	NA	NA	NA
		Temperate	NA	NA	NA	NA	NA	NA
		Warm	NA	NA	NA	NA	NA	NA
	MCF[b]	Cool	NA	NA	NA	NA	NA	NA
		Temperate	NA	NA	NA	NA	NA	NA
		Warm	NA	NA	NA	NA	NA	NA
Swine	Allocation(%)	Cool	NA	NA	NA	NA	NA	NA
		Temperate	NA	NA	NA	NA	NA	NA
		Warm	NA	NA	NA	NA	NA	NA
	MCF[b]	Cool	NA	NA	NA	NA	NA	NA
		Temperate	NA	NA	NA	NA	NA	NA
		Warm	NA	NA	NA	NA	NA	NA

[a] Copy the above table as many times as necessary.

[b] MCF = Methane Conversion Factor (IPCC Guidelines, (Volume 3. Reference Manual, p. 4.9)). In the case of use of other climate region categorization, please replace the entries in the cells with the climate regions for which the MCFs are specified.

TABLE 4.B(b) SECTORAL BACKGROUND DATA FOR AGRICULTURE

Canada

N_2O Emissions from Manure Management

1998

(Sheet 1 of 1)

Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA AND OTHER RELATED INFORMATION								IMPLIED EMISSION FACTORS	
	Population size [1] (1000s)	Nitrogen excretion (kg N/head/yr)	Nitrogen excretion per animal waste management system (kg N/yr)						Emission factor per animal waste management system (kg N_2O-N/kg N)	
			Anaerobic lagoon	Liquid system	Daily spread	Solid storage and dry lot	Pasture range and paddock	Other		
Non-Dairy Cattle	1,744	56.4	0.0	1.0	0.0	56.0	42.0	1.0	Anaerobic lagoon	0.000
Dairy Cattle	11,971	70.5	0.0	53.0	0.0	27.0	20.0	0.0	Liquid system	1,666.155
Sheep	443	6.8	0.0	0.0	0.0	46.0	44.0	10.0	Solid storage and dry lot	63,400.131
Swine	12,163	15.0	0.0	90.0	0.0	10.0	0.0	0.0	Other	12,145.364
Poultry	581,761	0.5	0.0	4.0	0.0	0.0	1.0	95.0		
Other *(please specify)*										
Total per AWMS[2]			**0.0**	**148.0**	**0.0**	**139.0**	**107.0**	**106.0**		

[1] See footnote 1 to Table 4.A of this common reporting format.

[2] AWMS - Animal Waste Management System.

Documentation box:

Refer to National Inventory Report for detailed methodologies.

[1] Annual Activity Data: Cattle, Sheep, Swine & Poultry

[1] Census Activity Data (five year interval): Goats, Horses, Mules & Asses

TABLE 4.C SECTORAL BACKGROUND DATA FOR AGRICULTURE
Rice Cultivation
(Sheet 1 of 1)

Canada
1998
Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		ACTIVITY DATA AND OTHER RELATED INFORMATION			IMPLIED EMISSION FACTOR [1]	EMISSIONS
		Harvested area [2] (10^{-9} m^2/yr)	Organic amendments added[3]: type	Organic amendments added[3]: (t/ha)	CH_4 (g/m^2)	CH_4 (Gg)
1. Irrigated						**0.00**
Continuously Flooded		NO	NO	NO	0.00	NO
Intermittently Flooded	Single Aeration	NO	NO	NO	0.00	NO
	Multiple Aeration	NO	NO	NO	0.00	NO
2. Rainfed						**0.00**
Flood Prone		NO	NO	NO	0.00	NO
Drought Prone		NO	NO	NO	0.00	NO
3. Deep Water						**0.00**
Water Depth 50-100 cm		NO	NO	NO	0.00	NO
Water Depth > 100 cm		NO	NO	NO	0.00	NO
4. Other *(please specify)*						**0.00**
					0.00	
Upland Rice[4]		NO				
Total [4]		0.00				

[1] The implied emission factor takes account of all relevant corrections for continuously flooded fields without organic amendment plus the correction for the organic amendments, if used, as well as of the effect of different soil characteristics, if taken into account, on methane emissions.

[2] Harvested area is the cultivated area multiplied by the number of cropping seasons per year.

[3] Specify dry weight or wet weight for organic amendments.

[4] These rows are included to allow comparison with the international statistics. Upland rice emissions are assumed to be zero and are ignored in the emission calculations.

Documentation box:
When dissagregating by more than one region within a country, provide additional information in the documentation box.
Where available, provide activity data and scaling factors by soil type and rice cultivar.

TABLE 4.D SECTORAL BACKGROUND DATA FOR AGRICULTURE

Agricultural Soils[(1)]

(Sheet 1 of 1)

Canada

1998

Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA AND OTHER RELATED INFORMATION		IMPLIED EMISSION FACTORS		EMISSIONS
	Description	Value	Unit		(Gg N_2O)
Direct Soil Emissions	**N input to soils (kg N/yr)**				**79.69**
Synthetic Fertilizers	Use of synthetic fertilizers (kg N/yr)	1,652,706,000	(kg N2O-N/kg N)[(2)]	0.006	14.32
Animal Wastes Applied to Soils	Nitrogen input from manure applied to soils (kg N/yr)	944,690,185	(kg N2O-N/kg N)[(2)]	0.009	13.58
N-fixing Crops	Dry pulses and soybeans produced (kg dry biomass/yr)	4,979,097,000	(kg N2O-N/kg dry biomass)[(2)]	0.002	12.31
Crop Residue	Dry production of other crops (kg dry biomass/yr)	74,998,853,000	(kg N2O-N/kg dry biomass)[(2)]	0.000	26.35
Cultivation of Histosols	Area of cultivated organic soils (ha)	1,669,920	(kg N2O-N/ha)[(2)]	5.000	13.12
Animal Production	**N excretion on pasture range and paddock (kg N/yr)**	**321,772,154**	**(kg N2O-N/kg N)[(2)]**	**0.020**	**10.11**
Indirect Emissions					**40.98**
Atmospheric Deposition	Volatized N (NH_3 and NOx) from fertilizers and animal wastes (kg N/yr)	418,563,068	(kg N2O-N/kg N)[(2)]	0.010	6.58
Nitrogen Leaching and Run-off	N from fertilizers and animal wastes that is lost through leaching and run off (kg N/yr)	125,568,920	(kg N2O-N/kg N)[(2)]	0.174	34.40
Other *(please specify)*					**0.00**
				0.000	

Additional information

Fraction [(a)]	Description	Value
$Frac_{BURN}$	Fraction of crop residue burned	0.00
$Frac_{FUEL}$	Fraction of livestock N excretion in excrements burned for fuel	0.00
$Frac_{GASF}$	Fraction of synthetic fertilizer N applied to soils that volatilizes as NH_3 and NOx	0.10
$Frac_{GASM}$	Fraction of livestock N excretion that volatilizes as NH_3 and NOx	0.20
$Frac_{GRAZ}$	Fraction of livestock N excreted and deposited onto soil during grazing	0.00
$Frac_{LEACH}$	Fraction of N input to soils that is lost through leaching and runoff	0.30
$Frac_{NCRBF}$	Fraction of N in N-fixing crop	0.03
$Frac_{NCRO}$	Fraction of N in non-N-fixing crop	0.02
$Frac_{R}$	Fraction or crop residue removed from the field as crop	0.45

[(a)] Use the fractions as specified in the IPCC Guidelines (Volume 3. Reference Manual, pp. 4.92 - 4.113).

[(1)] See footnote 4 to Summary 1.A. of this common reporting format. Parties which choose to report CO_2 emissions and removals from agricultural soils under 4.D. Agricultural Soils category should indicate the amount [Gg] of these emissions or removals and relevant additional information (activity data, implied emissions factors) in the documentation box.

[(2)] To convert from N_2O-N to N_2O emissions, multiply by 44/28.

Documentation box:

[(1)] CO_2 emissions from Agricultural Soil for 1998 is 875 Gg. CO_2 emission estimates are based on agricultural soil management practices. Refer to National Inventory Report for relevant methodology.

TABLE 4.E SECTORAL BACKGROUND DATA FOR AGRICULTURE

Canada

Prescribed Burning of Savannas

1998

(Sheet 1 of 1)

Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA AND OTHER RELATED INFORMATION					IMPLIED EMISSION FACTORS		EMISSIONS	
	Area of savanna burned (k ha/yr)	Average aboveground biomass density (t dm/ha)	Fraction of savanna burned	Biomass burned (Gg dm)	Nitrogen fraction in biomass	(kg/t dm)		(Gg)	
						CH_4	N_2O	CH_4	N_2O
(specify ecological zone)								0.00	0.00
	NO	NO	NO	NO	NO	0.00	0.00	NO	NO

Additional information

	Living	Dead
Fraction of aboveground biomass	NO	NO
Fraction oxidized	NO	NO
Carbon fraction	NO	NO

Documentation box:

TABLE 4.F SECTORAL BACKGROUND DATA FOR AGRICULTURE
Field Burning of Agricultural Residues
(Sheet 1 of 1)

Canada
1998
Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA AND OTHER RELATED INFORMATION						IMPLIED EMISSION FACTORS		EMISSIONS	
	Crop production (t)	Residue/ Crop ratio	Dry matter fraction	Fraction burned in fields	Biomass burned (Gg dm)	Nitrogen fraction in biomass of residues	CH_4 (kg/t dm)	N_2O (kg/t dm)	CH_4 (Gg)	N_2O (Gg)
1. Cereals									**0.00**	**0.00**
Wheat	NO	NO	NO	NO	NO	NO	0.00	0.00	NO	NO
Barley	NO	NO	NO	NO	NO	NO	0.00	0.00	NO	NO
Maize	NO	NO	NO	NO	NO	NO	0.00	0.00	NO	NO
Oats	NO	NO	NO	NO	NO	NO	0.00	0.00	NO	NO
Rye	NO	NO	NO	NO	NO	NO	0.00	0.00	NO	NO
Rice	NO	NO	NO	NO	NO	NO	0.00	0.00	NO	NO
Other *(please specify)*									0.00	0.00
							0.00	0.00		
2. Pulse [1]									**0.00**	**0.00**
Dry bean	NO	NO	NO	NO	NO	NO	0.00	0.00	NO	NO
Peas	NO	NO	NO	NO	NO	NO	0.00	0.00	NO	NO
Soybeans	NO	NO	NO	NO	NO	NO	0.00	0.00	NO	NO
Other *(please specify)*									0.00	0.00
							0.00	0.00		
3 Tuber and Root									**0.00**	**0.00**
Potatoes	NO	NO	NO	NO	NO	NO	0.00	0.00	NO	NO
Other *(please specify)*									0.00	0.00
							0.00	0.00		
4 Sugar Cane	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**	**0.00**	**0.00**	**NO**	**NO**
5 Other *(please specify)*									**0.00**	**0.00**
							0.00	0.00		

[1] To be used in Table 4.D of this common reporting format.

Documentation Box:

TABLE 5 SECTORAL REPORT FOR LAND-USE CHANGE AND FORESTRY
(Sheet 1 of 1)

Canada
1998
Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO_2 emissions	CO_2 removals	Net CO_2 emissions/ removals	CH_4	N_2O	NO_x	CO
	(Gg)						
Total Land-Use Change and Forestry	**276,094.00**	**-297,927.00**	**-21,833.00**	**41.70**	**2.80**	**0.00**	**0.00**
A. Changes in Forest and Other Woody Biomass Stocks	**256,424.00**	**-289,454.00**	**-33,030.00**				
1. Tropical Forests	NO	NO	0.00				
2. Temperate Forests	NA	IE	0.00				
3. Boreal Forests	NA	IE	0.00				
4. Grasslands/Tundra	NE	NE	0.00				
5. Other *(please specify)*	256,424.00	-289,454.00	-33,030.00				
Harvested Wood [1]	150,700.00	NA	150,700.00				
Firewood	32,970.00	NA	32,970.00				
Slash	72,754.00	NA	72,754.00				
Canadian Wood Production Forest	NA	-289,454.00	-289,454.00				
			0.00				
B. Forest and Grassland Conversion [2]	**3,924.00**			**0.00**	**0.00**	**0.00**	**0.00**
1. Tropical Forests	NO			NO	NO	NO	NO
2. Temperate Forests	2,796.00			NE	NE	NE	NE
3. Boreal Forests	783.00			NE	NE	NE	NE
4. Grasslands/Tundra	110.00			NE	NE	NE	NE
5. Other *(please specify)*	235.00			0.00	0.00	0.00	0.00
Agriculture	202.00			NE	NE	NE	NE
Unknown	33.00			NE	NE	NE	NE
C. Abandonment of Managed Lands	**0.00**	**-4,008.00**	**-4,008.00**				
1. Tropical Forests	NO	NO	0.00				
2. Temperate Forests	NA	-3,868.00	-3,868.00				
3. Boreal Forests	NA	-140.00	-140.00				
4. Grasslands/Tundra	NA	0.00	0.00				
5. Other *(please specify)*	0.00	0.00	0.00				
			0.00				
D. CO_2 Emissions and Removals from Soil	**9,726.00**	**-4,465.00**	**5,261.00**				
Cultivation of Mineral Soils	IE	NA	0.00				
Cultivation of Organic Soils	IE	NA	0.00				
Liming of Agricultural Soils	IE	NA	0.00				
Forest Soils	NE	NE	0.00				
Other *(please specify)* [3]	9,726.00	-4,465.00	5,261.00				
Land Conversion	9,726.00	NA	9,726.00				
Abandonment of Managed Lands	NA	-4,465.00	-4,465.00				
			0.00				
E. Other *(please specify)*	**6,020.00**	**0.00**	**6,020.00**	**41.70**	**2.80**	**0.00**	**0.00**
Prescribed Burning	IE	NA	0.00	13.20	0.50	NE	NE
Other Anthropogenic Fires in Wood Production Forest	IE	NA	0.00	17.40	1.40	NE	NE
Anthropogenic Fires Outside Wood Production Forest	6,020.00	NA	6,020.00	11.10	0.90	NE	NE
			0.00				

[1] Following the IPCC Guidelines, the harvested wood should be reported under Changes in Forest and Other Woody Biomass Stocks (Volume 3. Reference Manual, p.5.17).

[2] Include only the emissions of CO_2 from Forest and Grassland Conversion. Associated removals should be reported under section D.

[3] Include emissions from soils not reported under sections A, B and C.

Note: See footnote 4 to Summary 1.A of this common reporting format.

TABLE 5.A SECTORAL BACKGROUND DATA FOR LAND-USE CHANGE AND FORESTRY
Changes in Forest and Other Woody Biomass Stocks
(Sheet 1 of 1)

Canada
1998
Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES			ACTIVITY DATA		IMPLIED EMISSION FACTORS	ESTIMATES
			Area of forest/biomass stocks (kha)	Average annual growth rate (t dm/ha)	Implied carbon uptake factor (t C/ha)	Carbon uptake increment (Gg C)
Tropical	Plantations	*Acacia spp.*	NO	NO	0.00	NO
		Eucalyptus spp.	NO	NO	0.00	NO
		Tectona grandis	NO	NO	0.00	NO
		Pinus spp	NO	NO	0.00	NO
		Pinus caribaea	NO	NO	0.00	NO
		Mixed Hardwoods	NO	NO	0.00	NO
		Mixed Fast-Growing Hardwoods	NO	NO	0.00	NO
		Mixed Softwoods	NO	NO	0.00	NO
	Other Forests	Moist	NO	NO	0.00	NO
		Seasonal	NO	NO	0.00	NO
		Dry	NO	NO	0.00	NO
	Other *(specify)*				0.00	
					0.00	
Temperate	Plantations		NA	NA	0.00	NA
			NA	NA	0.00	NA
	Commercial	Evergreen	NA	NA	0.00	NA
		Deciduous	NA	NA	0.00	NA
	Other *(specify)*				0.00	
	Canadian Wood Production Forest (aggregate val		122,842.00	1.26	0.63	77,688.00
					0.00	
Boreal			NA	NA	0.00	NA
			Number of trees (1000s of trees)	Annual growth rate (kt dm/1000 trees)	Carbon uptake factor (t C/tree)	Carbon uptake increment (Gg C)
Non-Forest Trees *(specify type)*						1,213.00
Non-forest agricultural trees			NA	NA	0.00	1,213.00
Non-forest urban trees			NA	NA	0.00	41.00
					0.00	
Total annual growth increment (Gg C)						78,901.00
$Gg\ CO_2$						289,303.67

	Amount of biomass removed (kt dm)	Carbon emission factor (t C/t dm)	Carbon release (Gg C)
Total biomass removed in Commercial Harvest	82,200.00	0.50	41,100.00
Traditional Fuelwood Consumed	17,984.00	0.50	8,992.00
Total Other Wood Use		0.00	
Total Biomass Consumption from Stocks [1] (Gg C)			50,092.00
Other Changes in Carbon Stocks [2] (Gg C)			19,842.00
$Gg\ CO_2$			256,424.67

Net annual carbon uptake (+) or release (-) (Gg C)	8,967.00
Net CO_2 emissions (-) or removals (+) ($Gg\ CO_2$)	32,879.00

[1] Make sure that the quantity of biomass burned off-site is subtracted from this total.
[2] The net annual carbon uptake/release is determined by comparing the annual biomass growth versus annual harvest, including the decay of forest products and slash left during harvest. The IPCC Guidelines recommend default assumption that all carbon removed in wood and other biomass from forests is oxidized in the year of removal. The emissions from decay could be included under Other Changes in Carbon Stocks.

Note: Sectoral background data tables on Land-Use Change and Forestry should be filled in only by Parties using the IPCC default methodology. Parties that use country specific methods and models should report information on them in a transparent manner, also providing suggestions for a possible sectoral background data table suitable for their calculation method.

Documentation box:
Disaggregated data for the Temperate Forests, along with the Boreal Forest data, are included in the "Canadian Wood Production Forest" value.

TABLE 5.B SECTORAL BACKGROUND DATA FOR LAND-USE CHANGE AND FORESTRY
Forest and Grassland Conversion
(Sheet 1 of 1)

Canada
1998
Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		ACTIVITY DATA AND OTHER RELATED INFORMATION							IMPLIED EMISSION FACTORS					EMISSIONS				
		On and off site burning				Decay of above-ground biomass[1]			Burning				Decay	Burning				Decay
									On site			Off site		On site			Off site	
		Area converted annually	Annual net loss of biomass	Quantity of biomass burned		Average area converted	Average annual net loss of biomass	Average quantity of biomass left to decay	CO_2	CH_4	N_2O	CO_2	CO_2	CO_2	CH_4	N_2O	CO_2	CO_2
				On site	Off site													
Vegetation types		(kha)	(kt dm)	(kt dm)	(kt dm)	(kha)	(t dm/ha)	(kt dm)	(t/ha)					(Gg)				
Tropical	Wet/Very Moist	NO	NO	NO	NO	NO	NO	NO	0.00	0.00	0.00	0.00	0.00	NO	NO	NO	NO	NO
	Moist, short dry season	NO	NO	NO	NO	NO	NO	NO	0.00	0.00	0.00	0.00	0.00	NO	NO	NO	NO	NO
	Moist, long dry season	NO	NO	NO	NO	NO	NO	NO	0.00	0.00	0.00	0.00	0.00	NO	NO	NO	NO	NO
	Dry	NO	NO	NO	NO	NO	NO	NO	0.00	0.00	0.00	0.00	0.00	NO	NO	NO	NO	NO
	Montane Moist	NO	NO	NO	NO	NO	NO	NO	0.00	0.00	0.00	0.00	0.00	NO	NO	NO	NO	NO
	Montane Dry	NO	NO	NO	NO	NO	NO	NO	0.00	0.00	0.00	0.00	0.00	NO	NO	NO	NO	NO
Tropical Savanna/Grasslands		NO	NO	NO	NO	NO	NO	NO	0.00	0.00	0.00	0.00	0.00	NO	NO	NO	NO	NO
Temperate	Coniferous	NA	NA	NE	NE	NE	NE	NE	0.00	0.00	0.00	0.00	0.00	NE	NE	NE	NA	NE
	Broadleaf	NA	NA	NE	NE	NE	NE	NE	0.00	0.00	0.00	0.00	0.00	NE	NE	NE	NA	NE
	Mixed Broadleaf/ Coniferous	14.90	1,525.00	NE	NE	NE	NE	NE	#VALUE!	#VALUE!	#VALUE!	187.64	0.00	NE	NE	NE	2,795.83	NE
Grasslands		65.30	60.00	NE	NE	NE	NE	NE	#VALUE!	#VALUE!	#VALUE!	1.68	0.00	NE	NE	NE	110.00	NE
Boreal	Mixed Broadleaf/ Coniferous	10.70	427.00	NE	NE	NE	NE	NE	#VALUE!	#VALUE!	#VALUE!	73.16	0.00	NE	NE	NE	782.83	NE
	Coniferous	NA	NA	NE	NE	NE	NE	NE	0.00	0.00	0.00	0.00	0.00	NE	NE	NE	NA	NE
	Forest-tundra	NA	NA	NE	NE	NE	NE	NE	0.00	0.00	0.00	0.00	0.00	NE	NE	NE	NA	NE
Grasslands/Tundra		NA	NA	NA	NA	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA
Other *(please specify)*									0.00	0.00	0.00	0.00	0.00					
Agriculture to Urban/Other		11.00	110.00	NE	NE	NE	NE	NE	#VALUE!	#VALUE!	#VALUE!	18.33	0.00	NE	NE	NE	201.67	NE
Unknown to Urban/Other		9.00	18.00	NE	NE	NE	NE	NE	#VALUE!	#VALUE!	#VALUE!	3.67	0.00	NE	NE	NE	33.00	NE
									0.00	0.00	0.00	0.00	0.00					
Total														**0.00**	**0.00**	**0.00**	**3,923.33**	**0.00**

[1] Activity data are for default 10-year average. Specify the average decay time which is appropriate for the local conditions, if other than 10 years.

Emissions/Removals	On site	Off site
Immediate carbon release from burning	0.00	7.43
Total On site and Off site (Gg C)	7.43	
Delayed emissions from decay (Gg C)	0.00	
Total annual carbon release (Gg C)	7.43	
Total annual CO_2 emissions (Gg CO_2)	3,923.33	

Additional information

Fractions	On site	Off site
Fraction of biomass burned (average)	NE	NE
Fraction which oxidizes during burning (average)	NE	NE
Carbon fraction of aboveground biomass (average)	NE	NE
Fraction left to decay (average)	NE	NE
Nitrogen-carbon ratio	NE	NE

Note: Sectoral background data tables on Land-Use Change and Forestry should be filled in only by Parties using the IPCC default methodology. Parties that use country specific methods and models should report information on them in a transparent manner, also providing suggestions for a possible sectoral background data table suitable for their calculation method.

Documentation box:

It is not quantitatively known how much biomass loss occurs by what route (e.g. on-site or off-site biomass burning, decay). Because there is insufficient information to make these allocations at this time, only total C emissions from land conversion were estimated. The total CO2 emissions associated with biomass loss upon land conversion were entered in the 'Off-site Burning' column.

As in Table 5A, data for Temperate and Boreal Forests were not available or reclassified by species class, therefore the data represent total values for this forest type.

Other land-uses include infrastructure (road networks, hydroreservoirs etc.)

Unknown land-use represents land in transition, neither forested nor cultivated and already subject to human activity. It is assumed that the existing biomass before conversion for this category is very low (approx. 2 t dm/ha).

TABLE 5.C SECTORAL BACKGROUND DATA FOR LAND-USE CHANGE AND FORESTRY

Canada

Abandonment of Managed Lands

1998

(Sheet 1 of 1)

Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		ACTIVITY DATA AND OTHER RELATED INFORMATION						IMPLIED EMISSION FACTORS		ESTIMATES	
		Total area abandoned and regrowing [1]		Annual rate of aboveground biomass growth		Carbon fraction of aboveground biomass		Rate of aboveground biomass carbon uptake		Annual carbon uptake in aboveground biomass	
Original natural ecosystems		first 20 years (kha)	>20 years (kha)	first 20 years (t dm/ha)	>20 years (t dm/ha)	first 20 years	>20 years	first 20 years (t C/ha/yr)	>20 years (t C/ha/yr)	first 20 years (Gg C/yr)	>20 years (Gg C/yr)
Tropical	Wet/Very Moist	NO	NO	NO	NO	NO	NO	0.00	0.00	NO	NO
	Moist, short dry season	NO	NO	NO	NO	NO	NO	0.00	0.00	NO	NO
	Moist, long dry season	NO	NO	NO	NO	NO	NO	0.00	0.00	NO	NO
	Dry	NO	NO	NO	NO	NO	NO	0.00	0.00	NO	NO
	Montane Moist	NO	NO	NO	NO	NO	NO	0.00	0.00	NO	NO
	Montane Dry	NO	NO	NO	NO	NO	NO	0.00	0.00	NO	NO
Tropical Savanna/Grasslands		NO	NO	NO	NO	NO	NO	0.00	0.00	NO	NO
Temperate	Mixed Broadleaf/Coniferous	869.00	1,352.00	0.95	0.95	0.50	0.50	0.48	0.48	412.78	642.20
	Coniferous	NA	NA	NA	NA	NA	NA	0.00	0.00	NA	NA
	Broadleaf	NA	NA	NA	NA	NA	NA	0.00	0.00	NA	NA
Grasslands		296.00	482.00	0.00	0.00	0.50	0.50	0.00	0.00	0.00	0.00
Boreal	Mixed Broadleaf/Coniferous	132.00	231.00	0.21	0.21	0.50	0.50	0.11	0.11	13.86	24.26
	Coniferous	NA	NA	NA	NA	NA	NA	0.00	0.00	NA	NA
	Forest-tundra	NA	NA	NA	NA	NA	NA	0.00	0.00	NA	NA
Grasslands/Tundra		NA	NA	NA	NA	NA	NA	0.00	0.00	NA	NA
Other *(please specify)*								0.00	0.00		
								0.00	0.00		

Total annual carbon uptake (Gg C)	1,093.09
Total annual CO_2 removal (Gg CO_2)	4,008.00

[1] If lands are regenerating to grassland, then the default assumption is that no significant changes in above-ground biomass occur.

Note: Sectoral background data tables on Land-use Change and Forestry should be filled in only by Parties using the IPCC default methodology. Parties that use country specific methods and models should report information on them in a transparent manner, also providing suggestions for a possible sectoral background data table suitable for their calculation method.

Documentation box:

As in Table 5A, data for Temperate and Boreal Forests were not available or reclassified by species class, therefore the data represent total values for this forest type.

It is assumed that abandoned agricultural land reverting into grassland doesn't accumulate significantly more above-ground biomass.

TABLE 5.D SECTORAL BACKGROUND DATA FOR LAND-USE CHANGE AND FORESTRY

CO_2 Emissions and Removals from Soil

(Sheet 1 of 1)

Canada
1998
Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA	IMPLIED EMISSION FACTORS	ESTIMATES
	Land area (Mha)	Average annual rate of soil carbon uptake/removal (Mg C/ha/yr)	Net change in soil carbon in mineral soils (Tg C over 20 yr)
Cultivation of Mineral Soils [1]			**0.00**
High Activity Soils	IE	0.00	IE
Low Activity Soils	IE	0.00	IE
Sandy	IE	0.00	IE
Volcanic	IE	0.00	IE
Wetland (Aquic)	IE	0.00	IE
Other *(please specify)*			0.00
		0.00	
		0.00	
	Land area (ha)	Annual loss rate (Mg C/ha/yr)	Carbon emissions from organic soils (Mg C/yr)
Cultivation of Organic Soils	**NE**		**0.00**
Cool Temperate			**0.00**
Upland Crops	IE	0.00	IE
Pasture/Forest	IE	0.00	IE
Warm Temperate			**0.00**
Upland Crops	NO	0.00	NO
Pasture/Forest	NO	0.00	NO
Tropical			**0.00**
Upland Crops	NO	0.00	NO
Pasture/Forest	NO	0.00	NO
	Total annual amount of lime (Mg)	Carbon conversion factor	Carbon emissions from liming (Mg C)
Liming of Agricultural Soils			**0.00**
Limestone $Ca(CO_3)$	IE	0.00	IE
Dolomite $CaMg(CO_3)_2$	IE	0.00	IE

Total annual net carbon emissions from agriculturally impacted soils (Gg C)	0.00
Total annual net CO_2 emissions from agriculturally impacted soils (Gg CO_2)	0.00

Additional information

Year	Climate [a]	land-use/ management system [a]	Soil type: High activity soils	Low activity soils	Sandy	Volcanic	Wetland (Aquic)	Organic soil
			percent distribution (%)					
20 years prior	*(e.g. tropical, dry)*	*(e.g. savanna)*						
		(e.g. irrigated cropping)						
inventory year								

[a] These should represent the major types of land management systems per climate regions presented in the country as well as ecosystem types which were either converted to agriculture (e.g., forest, savanna, grassland) or have been derived from previous agricultural land-use (e.g., abandoned lands, reforested lands). Systems should also reflect differences in soil carbon stocks that can be related to differences in management (IPCC Guidelines (Volume 2. Workbook, Table 5-9, p. 5.26, and Appendix (pp. 5-31 - 5.38)).

[1] The information to be reported under Culitvation of Mineral Soils aggregates data per soil type over all land-use/management systems. This refers to land area data and to the emission estimates and implied emissions factors accordingly.

Note: Sectoral background data tables on Land-Use Change and Forestry should be filled in only by Parties using the IPCC default methodology. Parties that use country specific methods and models should report information on them in a transparent manner, also providing suggestions for a possible sectoral background data table suitable for their calculation method.

Documentation Box:

IPCC allows the reporting of net CO2 fluxes from agricultural soils in the Agriculture sector or the Land-use Change and Forestry sector. Canada has opted for the former.

TABLE 6 SECTORAL REPORT FOR WASTE
(Sheet 1 of 1)

Canada
1998
Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO_2[(1)]	CH_4	N_2O	NO_x	CO	NMVOC	SO_2
	(Gg)						
Total Waste	**276.82**	**1,037.52**	**3.25**	**0.00**	**0.00**	**0.00**	**0.00**
A. Solid Waste Disposal on Land	**0.00**	**1,018.43**		**0.00**	**0.00**	**0.00**	
1. Managed Waste Disposal on Land	NO	1,018.43		NE	NE	NE	
2. Unmanaged Waste Disposal Sites	0.00	0.00		NE	NE	NE	
3. Other *(please specify)*	0.00	0.00		0.00	0.00	0.00	
B. Wastewater Handling		**18.76**	**3.06**	**0.00**	**0.00**	**0.00**	
1. Industrial Wastewater		0.00	NE	NE	NE	NE	
2. Domestic and Commercial Wastewater		18.76	3.06	NE	NE	NE	
3. Other *(please specify)*		0.00	0.00	0.00	0.00	0.00	
C. Waste Incineration	**276.82**	**0.33**	**0.19**	**NE**	**NE**	**NE**	**NE**
D. Other *(please specify)*	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

(1) Note that CO_2 from Waste Disposal and Incineration source categories should only be included if it stems from non-biological or inorganic waste sources.

TABLE 6.A SECTORAL BACKGROUND DATA FOR WASTE
Solid Waste Disposal
(Sheet 1 of 1)

Canada
1998
Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA AND OTHER RELATED INFORMATION				IMPLIED EMISSION FACTOR		EMISSIONS[1]	
	Annual MSW at the SWDS (Gg)	MCF	DOC degraded (Gg)	CH_4 recovery[2] (Gg)	CH_4 (t /t MSW)	CO_2 (t /t MSW)	CH_4 (Gg)	CO_2[3] (Gg)
1 Managed Waste Disposal on Land	NA	NA	NA	292.41	0.00	0.00	1,018.43	NO
2 Unmanaged Waste Disposal Sites	NA	NA	NA	NA	0.00	0.00	0.00	0.00
- deep (>5 m)					0.00	0.00		
- shallow (<5 m)					0.00	0.00		
3 Other *(please specify)*							0.00	0.00
					0.00	0.00		

Additional information

Description	Value
Total population (1000s)[a]	30,330.42
Urban population (1000s)[a]	NA
Waste generation rate (kg/capita/day)	1.97
Fraction of MSW disposed to SWDS	NA
Fraction of DOC in MSW	NA
Fraction of wastes incinerated	NA
Fraction of wastes recycled	NA
CH4 oxidation factor (b)	NA
CH_4 fraction in landfill gas	NA
Number of SWDS recovering CH_4	NA
CH_4 generation rate constant (k)[c]	NA
Time lag considered (yr)[c]	NA
Composition of landfilled waste (%)	NA
Paper and paperboard	NA
Food and garden waste	NA
Plastics	NA
Glass	NA
Textiles	NA
Other *(specify)*	
other - inert	
other - organic	

TABLE 6.C SECTORAL BACKGROUND DATA FOR WASTE
Waste Incineration
(Sheet 1 of 1)

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA Amount of incinerated wastes (Gg)	IMPLIED EMISSION FACTOR			EMISSIONS		
		CO_2 (kg/t waste)	CH_4 (kg/t waste)	N_2O (kg/t waste)	CO_2[3] (Gg)	CH_4 (Gg)	N_2O (Gg)
Waste Incineration *(please specify)*					276.82	0.33	0.19
(biogenic)[3] *& Sewage Sludge*	NA	0.00	0.00	0.00	1,243.27	0.33	NE
MSW	NA	0.00	0.00	0.00	276.82	NE	0.19
		0.00	0.00	0.00			

MSW - Municipal Solid Waste, SWDS - Solid Waste Disposal Site, MCF - Methane Correction Factor, DOC - Degradable Organic Carbon (IPCC Guidelines (Volume 3. Reference Manual, section 6.2.4)). MSW includes household waste, yard/garden waste, commercial/market waste and organic industrial solid waste. MSW should not include inorganic industrial waste such as construction or demolition materials.

[1] Actual emissions (after recovery).

[2] CH_4 recovered and flared or utilized.

[3] Under Waste Disposal, CO_2 emissions should be reported only when the disposed wastes are combusted at the disposal site which might constitute a management practice. CO_2 emissions from non-biogenic wastes are included in the totals, while the CO_2 emissions from biogenic wastes are not included in the totals.

[a] Specify whether total or urban population is used and the rationale for doing so.

[b] See IPCC Guidelines (Volume 3. Reference Manual, p. 6.9).

[c] For Parties using Tier 2 methods.

Documentation box:
All relevant information used in calculation should be provided in the additional information box and in the documentation box.
Parties that use country specific models should note this with a brief rationale in the documentation box and fill the relevant cells only.

TABLE 6.B SECTORAL BACKGROUND DATA FOR WASTE
Wastewater Handling
(Sheet 1 of 1)

Canada
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GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA AND RELATED INFORMATION[1]				IMPLIED EMISSION FACTOR			EMISSIONS[2]		
	Total organic product		CH_4 recovered and/or flared		CH_4		N_2O[3]	CH_4		N_2O[3]
	Wastewater	Sludge	Wastewater	Sludge	Wastewater	Sludge		Wastewater	Sludge	
	(Gg DC[1]/yr)		(Gg)		(kg/kg DC)	(kg/kg DC)	(kg/kg DC)	(Gg)	(Gg)	(Gg)
Industrial Wastewater	NA	NA	NA	NA	0.00	0.00	NA	NE	NE	NE
Domestic and Commercial Wastewater	NA	NA	NA	NA	0.00	0.00	NA	18.76	NE	IE
Other *(please specify)*								0.00	0.00	0.00
					0.00	0.00				

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA AND OTHER RELATED INFORMATION			IMPLIED EMISSION FACTOR	EMISSIONS
	Population[4] (1000s)	Protein consumption (protein in kg/person/yr)	N fraction (kg N/kg protein)	N_2O (kg N_2O-N/kg sewage N produced)	N_2O (Gg)
N_2O from human sewage[3]	30,330	NA	NA	0.00	3.06

[1] DC - degradable organic component. DC indicators are COD (Chemical Oxygen Demand) for industrial wastewater and BOD (Biochemical Oxygen Demand) for Domestic/Commercial wastewater/sludge (IPCC Guidelines (Volume 3. Reference Manual, pp. 6.14, 6.18)).

[2] Actual emissions (after recovery).

[3] Parties using other methods for estimation of N_2O emissions from human sewage or wastewater treatment should provide corresponding information on methods, activity data and emission factors used in the documentation box. Use the table to provide aggregate data.

[4] Specify whether total or urban population is used in the calculations and the rationale for doing so. Provide explanation in the documentation box.

Documentation box:

[2] Assumed no CH_4 recovery for Domestic and Commerical Wasterwater Handling

[3] Refer to National Inventory Report for corresponding information on methods, activiity data and emission factors for the Waste sector.

[4] Total population was used for wastewater handling emission estimates. Refer to National Inventory Report for detailed Waste methodologies an explanation.

Additional information

	Domestic	Industrial
Total wastewater (m^3):	NA	NA
Treated wastewater (%):	NA	NA

Wastewater streams:	Wastewater output (m^3)	DC ($kgCOD/m^3$)
Industrial wastewater	NA	NA
Iron and steel	NA	NA
Non-ferrous	NA	NA
Fertilizers	NA	NA
Food and beverage	NA	NA
Paper and pulp	NA	NA
Organic chemicals	NA	NA
Other *(specify)*	NA	NA

	DC (kg BOD/1000 person/yr)
Domestic and Commercial	NA
Other	NA

Handling systems:	Industrial wastewater treated (%)	Ind. sludge treated (%)	Domestic wastewater treated (%)	Domestic sludge treated (%)
Aerobic	NA	NA	NA	NA
Anaerobic	NA	NA	NA	NA
Other *(specify)*	NA	NA	NA	NA

SUMMARY 1.A SUMMARY REPORT FOR NATIONAL GREENHOUSE GAS INVENTORIES (IPCC TABLE 7A)
(Sheet 1 of 3)

Canada
1998
Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO_2 emissions	CO_2 removals	CH_4	N_2O	HFCs[1]		PFCs[1]		SF_6		NO_x	CO	NMVOC	SO_2
					P	A	P	A	P	A				
	(Gg)				CO_2 equivalent (Gg)						(Gg)			
Total National Emissions and Removals	**529,430.89**	**-21,833.00**	**4,260.95**	**209.34**	**1,023.13**	**864.07**	**0.00**	**6,023.17**	**0.00**	**0.06**	**0.00**	**0.00**	**0.00**	**0.00**
1. Energy	**490,213.33**		**2,084.40**	**35.95**							**0.00**	**0.00**	**0.00**	**0.00**
A. Fuel Combustion — Reference Approach[2]	526,515.04													
A. Fuel Combustion — Sectoral Approach[2]	476,426.48		245.16	35.95							0.00	0.00	0.00	0.00
1. Energy Industries	181,201.43		2.08	3.22							0.00	0.00	0.00	0.00
2. Manufacturing Industries and Construction	53,128.59		1.72	1.62							0.00	0.00	0.00	0.00
3. Transport	174,251.81		25.12	28.08							0.00	0.00	0.00	0.00
4. Other Sectors	67,844.65		216.25	3.04							0.00	0.00	0.00	0.00
5. Other	0.00		0.00	0.00							0.00	0.00	0.00	0.00
B. Fugitive Emissions from Fuels	13,786.85		1,839.23	0.00							0.00	0.00	0.00	0.00
1. Solid Fuels	0.00		64.96	0.00							0.00	0.00	0.00	0.00
2. Oil and Natural Gas	13,786.85		1,774.28	0.00							0.00	0.00	0.00	0.00
2. Industrial Processes	**38,065.75**		**0.00**	**18.83**	**1,023.13**	**864.07**	**0.00**	**6,023.17**	**0.00**	**0.06**	**0.00**	**0.00**	**0.00**	**0.00**
A. Mineral Products	8,360.74		0.00	0.00							0.00	0.00	0.00	0.00
B. Chemical Industry	3,898.29		0.00	18.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C. Metal Production	12,133.11		0.00	0.00				6,023.17		0.06	0.00	0.00	0.00	0.00
D. Other Production[3]	IE										0.00	0.00	0.00	0.00
E. Production of Halocarbons and SF_6						0.00		0.00		0.00				
F. Consumption of Halocarbons and SF_6					1,023.13	864.07	0.00	0.00	0.00	0.00				
G. Other	13,673.61		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

P = Potential emissions based on Tier 1 approach of the IPCC Guidelines.

A = Actual emissions based on Tier 2 approach of the IPCC Guidelines.

[1] The emissions of HFCs and PFCs are to be expressed as CO_2 equivalent emissions. Data on disaggregated emissions of HFCs and PFCs are to be provided in Table 2(II) of this common reporting format.

[2] For verification purposes, countries are asked to report the results of their calculations using the Reference approach and to explain any differences with the Sectoral approach. Where possible, the calculations using the Sectoral approach should be used for estimating national totals. Do not include the results of both the Reference approach and the Sectoral approach in national totals.

[3] Other Production includes Pulp and Paper and Food and Drink Production.

Note: The numbering of footnotes to all tables containing more than one sheet continue to the next sheet. Common footnotes are given only once at the first point of reference.

SUMMARY 1.A SUMMARY REPORT FOR NATIONAL GREENHOUSE GAS INVENTORIES (IPCC TABLE 7A)
(Sheet 2 of 3)

Canada
1998
Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO_2 emissions	CO_2 removals	CH_4	N_2O	HFCs [1]		PFCs[1]		SF_6		NO_x	CO	NMVOC	SO_2
					P	A	P	A	P	A				
	(Gg)				CO_2 equivalent (Gg)						(Gg)			
3. Solvent and Other Product Use	**0.00**			**1.47**							**NE**	**NE**	**0.00**	NE
4. Agriculture	**875.00**	**0.00**	**1,097.33**	**147.04**							0.00	0.00	0.00	0.00
A. Enteric Fermentation			855.43											
B. Manure Management			241.90	16.26									0.00	
C. Rice Cultivation			0.00										0.00	
D. Agricultural Soils	[4] 875.00	[4] NA	0.00	130.78									0.00	
E. Prescribed Burning of Savannas			0.00	0.00							NE	NE	NE	
F. Field Burning of Agricultural Residues			0.00	0.00							0.00	0.00	0.00	
G. Other			0.00	0.00							0.00	0.00	0.00	NE
5. Land-Use Change and Forestry	[5] **0.00**	[5] **-21,833.00**	**41.70**	**2.80**							**0.00**	**0.00**	**0.00**	**0.00**
A. Changes in Forest and Other Woody Biomass Stocks	[5] 0.00	[5] -33,030.00												
B. Forest and Grassland Conversion	3,924.00		0.00	0.00							0.00	0.00	NE	
C. Abandonment of Managed Lands	[5] 0.00	[5] -4,008.00												
D. CO_2 Emissions and Removals from Soil	[5] 5,261.00	[5] 0.00												
E. Other	[5] 6,020.00	[5] 0.00	41.70	2.80							0.00	0.00	NE	NE
6. Waste	**276.82**		**1,037.52**	**3.25**							**0.00**	**0.00**	**0.00**	**0.00**
A. Solid Waste Disposal on Land	[6] 0.00		1,018.43									0.00	0.00	
B. Wastewater Handling			18.76	3.06							0.00	0.00	0.00	
C. Waste Incineration	[6] 276.82		0.33	0.19							NE	NE	NE	NE
D. Other	0.00		0.00	0.00							0.00	0.00	0.00	0.00
7. Other *(please specify)*	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

[4] According to the IPCC Guidelines (Volume 3. Reference Manual, pp. 4.2, 4.87), CO_2 emissions from agricultural soils are to be included under Land-Use Change and Forestry (LUCF). At the same time, the Summary Report 7A (Volume 1. Reporting Instructions, Tables.27) allows for reporting CO_2 emissions or removals from agricultural soils, either in the Agriculture sector, under D. Agricultural Soils or in the Land-Use Change and Forestry sector under D. Emissions and Removals from Soil. Parties may choose either way to report emissions or removals from this source in the common reporting format, but the way they have chosen to report should be clearly indicated, by inserting explanatory comments to the corresponding cells of Summary 1.A and Summary 1.B. Double-counting of these emissions or removals should be avoided. Parties should include these emissions or removals consistently in Table8(a) (Recalculation - Recalculated data) and Table10 (Emission trends).

[5] Please do not provide an estimate of both CO_2 emissions and CO_2 removals. "Net" emissions (emissions - removals) of CO_2 should be estimated and a single number placed in either the CO_2 emissions or CO_2 removals column, as appropriate. Please note that for the purposes of reporting, the signs for uptake are always (-) and for emissions (+).

[6] Note that CO_2 from Waste Disposal and Incineration source categories should only be included if it stems from non-biogenic or inorganic waste streams.

SUMMARY 1.A SUMMARY REPORT FOR NATIONAL GREENHOUSE GAS INVENTORIES (IPCC TABLE 7A)
(Sheet 3 of 3)

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GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO_2 emissions	CO_2 removals	CH_4	N_2O	HFCs		PFCs		SF_6		NO_x	CO	NMVOC	SO_2
					P	A	P	A	P	A				
	(Gg)				CO_2 equivalent (Gg)						(Gg)			
Memo Items: [7]														
International Bunkers	**6,654.90**		**0.14**	**0.83**							**0.00**	**0.00**	**0.00**	**0.00**
Aviation	2,878.90		0.09	0.28							NE	NE	NE	NE
Marine	3,776.00		0.05	0.55							NE	NE	NE	NE
Multilateral Operations	**0.00**		**0.00**	**0.00**							**NE**	**NE**	**NE**	**NE**
CO_2 Emissions from Biomass	**62,820.69**													

[7] Memo Items are not included in the national totals.

SUMMARY 1.B SHORT SUMMARY REPORT FOR NATIONAL GREENHOUSE GAS INVENTORIES (IPCC TABLE 7B)
(Sheet 1 of 1)

Canada
1998
Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		CO_2 emissions	CO_2 removals	CH_4	N_2O	$HFCs^{(1)}$		$PFCs^{(1)}$		SF_6		NO_x	CO	NMVOC	SO_2
						P	A	P	A	P	A				
		(Gg)				CO_2 equivalent (Gg)						(Gg)			
Total National Emissions and Removals		**529,430.89**	**-21,833.00**	**4,260.95**	**209.34**	**1,023.13**	**864.07**	**0.00**	**6,023.17**	**0.00**	**0.06**	**0.00**	**0.00**	**0.00**	**0.00**
1. Energy		**490,213.33**		**2,084.40**	**35.95**							**0.00**	**0.00**	**0.00**	**0.00**
A. Fuel Combustion	Reference Approach[2]	526,515.04													
	Sectoral Approach[2]	476,426.48		245.16	35.95							0.00	0.00	0.00	0.00
B. Fugitive Emissions from Fuels		13,786.85		1,839.23	0.00							0.00	0.00	0.00	0.00
2. Industrial Processes		**38,065.75**		**0.00**	**18.83**	**1,023.13**	**864.07**	**0.00**	**6,023.17**	**0.00**	**0.06**	**0.00**	**0.00**	**0.00**	**0.00**
3. Solvent and Other Product Use		**0.00**			**1.47**							**NE**	**NE**	**0.00**	**NE**
4. Agriculture [3]		**875.00**	**0.00**	**1,097.33**	**147.04**							**0.00**	**0.00**	**0.00**	**0.00**
5. Land-Use Change and Forestry		[4] **0.00**	[4] **-21,833.00**	**41.70**	**2.80**							**0.00**	**0.00**	**0.00**	**0.00**
6. Waste		**276.82**		**1,037.52**	**3.25**							**0.00**	**0.00**	**0.00**	**0.00**
7. Other		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Memo Items:															
International Bunkers		**6,654.90**		**0.14**	**0.83**							**0.00**	**0.00**	**0.00**	**0.00**
Aviation		2,878.90		0.09	0.28							NE	NE	NE	NE
Marine		3,776.00		0.05	0.55							NE	NE	NE	NE
Multilateral Operations		**0.00**		**0.00**	**0.00**							**NE**	**NE**	**NE**	**NE**
CO_2 Emissions from Biomass		**62,820.69**													

P = Potential emissions based on Tier 1 approach of the IPCC Guidelines.

A = Actual emissions based on Tier 2 approach of the IPCC Guidelines.

[1] The emissions of HFCs and PFCs are to be expressed as CO_2 equivalent emissions. Data on disaggregated emissions of HFCs and PFCs are to be provided in Table 2(II) of this common reporting format.

[2] For verification purposes, countries are asked to report the results of their calculations using the Reference approach and to explain any differences with the Sectoral approach in document box of Table1.A(c). Where possible, the calculations using the Sectoral approach should be used for estimating national totals. Do not include the results of both the Reference approach and the Sectoral approach in national totals.

[3] See footnote 4 to Summary 1.A.

[4] Please do not provide an estimate of both CO_2 emissions and CO_2 removals. "Net" emissions (emissions - removals) of CO_2 should be estimated and a single number placed in either the CO_2 emissions or CO_2 removals column, as appropriate. Please note that for the purposes of reporting, the signs for uptake are always (-) and for emissions (+).

SUMMARY 2 SUMMARY REPORT FOR CO_2 EQUIVALENT EMISSIONS
(Sheet 1 of 1)

Canada
1998
Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO_2 [(1)]	CH_4	N_2O	HFCs	PFCs	SF_6	Total
	CO_2 equivalent (Gg)						
Total (Net Emissions) [(1)]	**507,597.89**	**89,479.89**	**64,895.61**	**864.07**	**6,023.17**	**1,536.21**	**670,396.84**
1. Energy	**490,213.33**	**43,772.36**	**11,143.27**				**545,128.96**
A. Fuel Combustion (Sectoral Approach)	476,426.48	5,148.45	11,143.27				492,718.20
1. Energy Industries	181,201.43	43.60	996.65				182,241.68
2. Manufacturing Industries and Construction	53,128.59	36.20	501.89				53,666.68
3. Transport	174,251.81	527.45	8,703.87				183,483.13
4. Other Sectors	67,844.65	4,541.20	940.86				73,326.71
5. Other	0.00	0.00	0.00				0.00
B. Fugitive Emissions from Fuels	13,786.85	38,623.91	0.00				52,410.76
1. Solid Fuels	0.00	1,364.06	0.00				1,364.06
2. Oil and Natural Gas	13,786.85	37,259.86	0.00				51,046.71
2. Industrial Processes	**38,065.75**	**0.00**	**5,837.30**	**864.07**	**6,023.17**	**1,536.21**	**52,326.50**
A. Mineral Products	8,360.74	0.00	0.00				8,360.74
B. Chemical Industry	3,898.29	0.00	5,837.30	0.00	0.00	0.00	9,735.59
C. Metal Production	12,133.11	0.00	0.00		6,023.17	1,536.21	19,692.50
D. Other Production	IE						0.00
E. Production of Halocarbons and SF_6				0.00	0.00	0.00	0.00
F. Consumption of Halocarbons and SF_6				864.07	0.00	0.00	864.07
G. Other	13,673.61	0.00	0.00	0.00	0.00	0.00	13,673.61
3. Solvent and Other Product Use	**0.00**		**456.97**				**456.97**
4. Agriculture	**875.00**	**23,043.93**	**45,582.67**				**69,501.60**
A. Enteric Fermentation		17,964.03					17,964.03
B. Manure Management		5,079.90	5,040.28				10,120.18
C. Rice Cultivation		0.00					0.00
D. Agricultural Soils[(2)]	875.00	0.00	40,542.39				41,417.39
E. Prescribed Burning of Savannas		0.00	0.00				0.00
F. Field Burning of Agricultural Residues		0.00	0.00				0.00
G. Other		0.00	0.00				0.00
5. Land-Use Change and Forestry[(1)]	**-21,833.00**	**875.70**	**868.00**				**-20,089.30**
6. Waste	**276.82**	**21,787.89**	**1,007.40**				23,072.11
A. Solid Waste Disposal on Land	0.00	21,387.06					21,387.06
B. Wastewater Handling		393.91	949.16				1,343.07
C. Waste Incineration	276.82	6.92	58.24				341.98
D. Other	0.00	0.00	0.00				0.00
7. Other *(please specify)*	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
							0.00
Memo Items:							
International Bunkers	**6,654.90**	**3.01**	**258.10**				**6,916.02**
Aviation	2,878.90	1.86	87.49				2,968.25
Marine	3,776.00	1.15	170.61				3,947.77
Multilateral Operations	**0.00**	**0.00**	**0.00**				**0.00**
CO_2 Emissions from Biomass	**62,820.69**						**62,820.69**

[(1)] For CO_2 emissions from Land-Use Change and Forestry the net emissions are to be reported. Please note that for the purposes of reporting, the signs for uptake are always (-) and for emissions (+).
[(2)] See footnote 4 to Summary 1.A of this common reporting format.

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO_2 emissions	CO_2 removals	Net CO_2 emissions / removals	CH_4	N_2O	Total emissions
Land-Use Change and Forestry	CO_2 equivalent (Gg)					
A. Changes in Forest and Other Woody Biomass Stocks	256,424.00	-289,454.00	-33,030.00			-33,030.00
B. Forest and Grassland Conversion	3,924.00		3,924.00	0.00	0.00	3,924.00
C. Abandonment of Managed Lands	0.00	-4,008.00	-4,008.00			-4,008.00
D. CO_2 Emissions and Removals from Soil	9,726.00	-4,465.00	5,261.00			5,261.00
E. Other	6,020.00	0.00	6,020.00	875.70	868.00	7,763.70
Total CO_2 Equivalent Emissions from Land-Use Change and Forestry	276,094.00	-297,927.00	-21,833.00	875.70	868.00	-20,089.30

Total CO_2 Equivalent Emissions without Land-Use Change and Forestry [(a) & (b)]	690,486.14
Total CO_2 Equivalent Emissions with Land-Use Change and Forestry [(a)]	670,396.84

(a) The information in these rows is requested to facilitate comparison of data, since Parties differ in the way they report emissions and removals from Land-Use Change and Forestry.
(b) National Net CO2 Equivalent Emissions without CO2 from LUCF is found on Table 8(a) Recalculation (Total CO2 Equivalent Emissions without Land-Use Change and Forestry and on Table 10: Emission Trends (Summary))

SUMMARY 3 SUMMARY REPORT FOR METHODS AND EMISSION FACTORS USED
(Sheet 1 of 2)

Canada
1998
Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO_2		CH_4		N_2O		HFCs		PFCs		SF_6	
	Method applied [1]	Emission factor [2]	Method applied [1]	Emission factor [2]	Method applied [1]	Emission factor [2]	Method applied [1]	Emission factor [2]	Method applied [1]	Emission factor [2]	Method applied [1]	Emission factor [2]
1. Energy	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**						
A. Fuel Combustion	NA	NA	NA	NA	NA	NA						
1. Energy Industries	T1	CS	T1	CS	T1	CS						
2. Manufacturing Industries and Construction	T1	CS	T1	CS	T1	CS						
3. Transport	CS	CS	CS	CS	CS	CS						
4. Other Sectors	T1	CS	T1	CS	T1	CS						
5. Other												
B. Fugitive Emissions from Fuels	NA	NA	NA	NA	NA	NA						
1. Solid Fuels	CS	CS	CS	CS	CS	CS						
2. Oil and Natural Gas	CS	CS	CS	CS	CS	CS						
2. Industrial Processes	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**
A. Mineral Products	T1	CS	NA	NA	NA	NA						
B. Chemical Industry	T1	CS	NA	NA	NA	NA	NA	NA	T3	PS	T3	CS
C. Metal Production	CS	CS	NA	NA	NA	NA						
D. Other Production	CS	CS										
E. Production of Halocarbons and SF_6							NA	NA	NA	NA	NA	NA
F. Consumption of Halocarbons and SF_6							T2	D	T2	PS	T3	PS
G. Other												

[1] Use the following notation keys to specify the method applied: D (IPCC default), RA (Reference Approach), T1 (IPCC Tier 1), T1a, T1b, T1c (IPCC Tier 1a, Tier 1b and Tier 1c, respectively), T2 (IPCC Tier 2), T3 (IPCC Tier 3), C (CORINAIR), CS (Country Specific), M (Model). If using more than one method, enumerate the relevant methods. Explanations of any modifications to the default IPCC methods, as well as information on the proper use of methods per source category where more than one method is indicated, and explanations on the country specific methods, should be provided in the documentation box of the relevant Sectoral background data table.

[2] Use the following notation keys to specify the emission factor used: D (IPCC default), C (CORINAIR), CS (Country Specific), PS (Plant Specific), M (Model). Where a mix of emission factors has been used, use different notations in one and the same cells with further explanation in the documentation box of the relevant Sectoral background data table.

SUMMARY 3 SUMMARY REPORT FOR METHODS AND EMISSION FACTORS USED
(Sheet 2 of 2)

Canada
1998
Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO_2		CH_4		N_2O		HFCs		PFCs		SF_6	
	Method applied (1)	Emission factor (2)	Method applied (1)	Emission factor (2)	Method applied (1)	Emission factor (2)	Method applied (1)	Emission factor (2)	Method applied (1)	Emission factor (2)	Method applied (1)	Emission factor (2)
3. Solvent and Other Product Use	**NA**	**NA**			**CS**	**CS**						
4. Agriculture	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**						
A. Enteric Fermentation			T1	D								
B. Manure Management			T1	D	T1	D						
C. Rice Cultivation			NA	NA								
D. Agricultural Soils	CS	CS	NA	NA	T1	D						
E. Prescribed Burning of Savannas			NA	NA	NA	NA						
F. Field Burning of Agricultural Residues			NA	NA	NA	NA						
G. Other			NA	NA	NA	NA						
5. Land-Use Change and Forestry	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**						
A. Changes in Forest and Other Woody Biomass Stocks	CS/D	CS										
B. Forest and Grassland Conversion	CS/D	CS	NA	NA	NA	NA						
C. Abandonment of Managed Lands	D	CS										
D. CO_2 Emissions and Removals from Soil	CS/D	CS										
E. Other	CS	CS	CS	CS	CS	CS						
6. Waste	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**						
A. Solid Waste Disposal on Land	NA	NA	ethod applied (1)	CS								
B. Wastewater Handling			CS	CS	D	D						
C. Waste Incineration	CS	CS	CS	CS	CS	CS						
D. Other	NA	NA	NA	NA	NA	NA						
7. Other *(please specify)*	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

TABLE 7 OVERVIEW TABLE[(1)] FOR NATIONAL GREENHOUSE GAS INVENTORIES (IPCC TABLE 8A)
(Sheet 1 of 3)

Canada
1998
Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO_2		CH_4		N_2O		HFCs		PFCs		SF_6		NO_x		CO		NMVOC		SO_2	
	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality
Total National Emissions and Removals	all	H	all	M	all	L	Part	L	all	L	Part	H	NE	-	NE	-	NE	-	NE	-
1 Energy	all	H	all	M	all	L							NE	-	NE	-	NE	-	NE	-
A. Fuel Combustion Activities																				
Reference Approach	all	H																		
Sectoral Approach	all	H	all	M	all	L							NE	-	NE	-	NE	-	NE	-
1. Energy Industries	all	H	all	M	all	L							NE	-	NE	-	NE	-	NE	-
2. Manufacturing Industries and Construction	all	H	all	M	all	L							NE	-	NE	-	NE	-	NE	-
3. Transport	all	H	all	M	all	L							NE	-	NE	-	NE	-	NE	-
4. Other Sectors	all	H	all	M	all	L							NE	-	NE	-	NE	-	NE	-
5. Other	NA	-	NA	-	NA	-							NE	-	NE	-	NE	-	NE	-
B. Fugitive Emissions from Fuels	all	M	all	L	NO	-							NE	-	NE	-	NE	-	NE	-
1. Solid Fuels	NE	-	all	L	NO	-														
2. Oil and Natural Gas	all	M	all	M	NO	-							NE	-	NE	-	NE	-	NE	-
2 Industrial Processes	all	M	NO	-	Part	M	Part	L	all	L	Part	H	NE	-	NE	-	NE	-	NE	-
A. Mineral Products	all	M	NO	-	NO	-							NE	-	NE	-	NE	-	NE	-
B. Chemical Industry	Part	H	NO	-	Part	M	NA	-	NA	-			NE	-	NE	-	NE	-	NE	-
C. Metal Production	Part	H	NO	-	NO	-			all	L	Part	H	NE	-	NE	-	NE	-	NE	-
D. Other Production	NO	-											NE	-	NE	-	NE	-	NE	-
E. Production of Halocarbons and SF_6							Part	L	NO	-	NO	-								

[(1)] This table is intended to be used by Parties to summarize their own assessment of completeness (e.g. partial, full estimate, not estimated) and quality (high, medium, low) of major source/sink inventory estimates. The latter could be understood as a quality assessment of the uncertainty of the estimates. This table might change once the IPCC completes its work on managing uncertainties of GHG inventories. The title of the table was kept for consistency with the current table in the IPCC Guidelines.

Note: To fill in the table use the notation key as given in the IPCC Guidelines (Volume 1. Reporting Instructions, Tables. 37).

Canadian Comments

All (Full estimate of all possible sources): "All" is entered here when "All significant sources" have been accounted for in the present inventory.(I.e. some insignificant sources may have been neglected)
Part (Partly Estimated): "Part" is entered when data representing a significant source is unavailable and hence not included in the present inventory.
Total National Emissions and Removals: Estimate code at the fully aggregated level does not address the exclusion of certain LUFC categories. (e.g. Carbon Stored in wood products)

TABLE 7 OVERVIEW TABLE FOR NATIONAL GREENHOUSE GAS INVENTORIES (IPCC TABLE 8A)
(Sheet 2 of 3)

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO_2		CH_4		N_2O		HFCs		PFCs		SF_6		NO_x		CO		NMVOC		SO_2	
	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality
2 Industrial Processes (continued)																				
F. Consumption of Halocarbons and SF_6																				
Potential [2]							Part	H	NO	-	NE	-								
Actual [3]							Part	L	NO	-	NE	-								
G. Other	all	M	NA	-	NA	-	NA	-	NA	-	NA	-	NE	-	NE	-	NE	-	NE	-
3 Solvent and Other Product Use	NE	-			all	M							NE	-	NE	-	NE	-	NE	-
4 Agriculture	all	L	all	L	all	L							NE	-	NE	-	NE	-	NE	-
A. Enteric Fermentation			all	M																
B. Manure Management			all	L	all	L											NE	-		
C. Rice Cultivation			NO	-													NE	-		
D. Agricultural Soils	all	L	NA	-	all	L											NE	-		
E. Prescribed Burning of Savannas			NO	-	NO	-							NE	-	NE	-	NE	-	NE	-
F. Field Burning of Agricultural Residues			NO	-	NO	-							NE	-	NE	-	NE	-	NE	-
G. Other			NA	-	NA	-							NE	-	NE	-	NE	-	NE	-
5 Land-Use Change and Forestry	Part	L	Part	L	Part	L							NE	-	NE	-	NE	-	NE	-
A. Changes in Forest and Other Woody Biomass Stocks	all	L																		
B. Forest and Grassland Conversion	all	L	NE	-	NE	-							NE	-	NE	-	NE	-		

[2] Potential emissions based on Tier 1 approach of the IPCC Guidelines.
[3] Actual emissions based on Tier 2 approach of the IPCC Guidelines.

TABLE 7 OVERVIEW TABLE FOR NATIONAL GREENHOUSE GAS INVENTORIES (IPCC TABLE 8A)
(Sheet 3 of 3)

Canada
1998
Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO_2		CH_4		N_2O		HFCs		PFCs		SF_6		NO_x		CO		NMVOC		SO_2	
	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality
5 Land-Use Change and Forestry (continued)																				
C. Abandonment of Managed Lands	all	L																		
D. CO_2 Emissions and Removals from Soil	all	L																		
E. Other	all	L	all	L	all	L							NE	-	NE	-	NE	-	NE	-
6 Waste	all	L	all	L	all	L							NE	-	NE	-	NE	-	NE	-
A. Solid Waste Disposal on Land	NA	-	all	M											NE	-	NE	-		
B. Wastewater Handling			all	L	all	L							NE	-	NE	-	NE	-		
C. Waste Incineration	all	L	all	L	all	L							NE	-	NE	-	NE	-	NE	-
D. Other	NA	-	NA	-	NA	-							NE	-	NE	-	NE	-	NE	-
7 Other *(please specify)*	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-
	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-
Memo Items:																				
International Bunkers	Part	H	Part	M	Part	L							NE	-	NE	-	NE	-	NE	-
Aviation	Part	H	Part	M	Part	L							NE	-	NE	-	NE	-	NE	-
Marine	Part	H	Part	M	Part	L							NE	-	NE	-	NE	-	NE	-
Multilateral Operations	IE	-	IE	-	IE	-							NE	-	NE	-	NE	-	NE	-
CO_2 Emissions from Biomass	Part	M																		

TABLE 8(a) RECALCULATION - RECALCULATED DATA

Recalculated year: 1998

(Sheet 1 of 2)

Canada
1998
Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		CO_2			CH_4			N_2O		
		Previous submission	Latest submission	Difference[1]	Previous submission	Latest submission	Difference[1]	Previous submission	Latest submission	Difference[1]
		CO_2 equivalent (Gg)		(%)	CO_2 equivalent (Gg)		(%)	CO_2 equivalent (Gg)		(%)
Total National Emissions and Removals			**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**
1. Energy			**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**
1.A.	Fuel Combustion Activities			0.00			0.00			0.00
1.A.1.	Energy Industries			0.00			0.00			0.00
1.A.2.	Manufacturing Industries and Construction			0.00			0.00			0.00
1.A.3.	Transport			0.00			0.00			0.00
1.A.4.	Other Sectors			0.00			0.00			0.00
1.A.5.	Other			0.00			0.00			0.00
1.B.	Fugitive Emissions from Fuels			0.00			0.00			0.00
1.B.1.	Solid fuel			0.00			0.00			0.00
1.B.2.	Oil and Natural Gas			0.00			0.00			0.00
2. Industrial Processes			**0.00**	**0.00**			**0.00**		**0.00**	**0.00**
2.A.	Mineral Products			0.00			0.00			0.00
2.B.	Chemical Industry			0.00			0.00			0.00
2.C.	Metal Production			0.00			0.00			0.00
2.D.	Other Production			0.00						
2.G.	Other			0.00			0.00			0.00
3. Solvent and Other Product Use				**0.00**						**0.00**
4. Agriculture			**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**
4.A.	Enteric Fermentation						0.00			
4.B.	Manure Management						0.00			0.00
4.C.	Rice Cultivation						0.00			
4.D.	Agricultural Soils [2]			0.00			0.00			0.00
4.E.	Prescribed Burning of Savannas						0.00			0.00
4.F.	Field Burning of Agricultural Residues						0.00			0.00
4.G.	Other						0.00			0.00
5. Land-Use Change and Forestry (net)			**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**
5.A.	Changes in Forest and Other Woody Biomass Stocks			0.00						
5.B.	Forest and Grassland Conversion			0.00			0.00			0.00
5.C.	Abandonment of Managed Lands			0.00						
5.D.	CO_2 Emissions and Removals from Soil			0.00						
5.E.	Other			0.00			0.00			0.00

[1] Estimate the percentage change due to recalculation with respect to the previous submission (Percentage change = 100% x [(LS-PS)/PS], where LS = Latest submission and PS = Previous submission.
All cases of recalculation of the estimate of the source/sink category, should be addressed and explained in Table 8(b) of this common reporting format.

[2] See footnote 4 to Summary 1.A of this common reporting format.

TABLE 8(a) RECALCULATION - RECALCULATED DATA
Recalculated year: 1998
(Sheet 2 of 2)

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		CO_2			CH_4			N_2O		
		Previous submission	Latest submission	Difference[1]	Previous submission	Latest submission	Difference[1]	Previous submission	Latest submission	Difference[1]
		CO_2 equivalent (Gg)		(%)	CO_2 equivalent (Gg)		(%)	CO_2 equivalent (Gg)		(%)
6. Waste			**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**
6.A.	Solid Waste Disposal on Land			0.00			0.00			
6.B.	Wastewater Handling						0.00			0.00
6.C.	Waste Incineration			0.00			0.00			0.00
6.D.	Other			0.00			0.00			0.00
7. Other *(please specify)*				**0.00**			**0.00**			**0.00**
				0.00			0.00			0.00
Memo Items:										
International Bunkers				**0.00**			**0.00**			**0.00**
Multilateral Operations				**0.00**			**0.00**			**0.00**
CO_2 Emissions from Biomass				**0.00**						

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		HFCs			PFCs			SF_6		
		Previous submission	Latest submission	Difference[1]	Previous submission	Latest submission	Difference[1]	Previous submission	Latest submission	Difference[1]
		CO_2 equivalent (Gg)		(%)	CO_2 equivalent (Gg)		(%)	CO_2 equivalent (Gg)		(%)
Total Actual Emissions			**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**
2.C.3.	Aluminium Production						0.00			0.00
2.E.	Production of Halocarbons and SF_6			0.00			0.00			0.00
2.F.	Consumption of Halocarbons and SF_6			0.00			0.00			0.00
	Other			0.00			0.00			0.00
Potential Emissions from Consumption of HFCs/PFCs and SF_6										

	Previous submission	Latest submission	Difference[1]
	CO_2 equivalent (Gg)		(%)
Total CO_2 Equivalent Emissions with Land-Use Change and Forestry [3]			0.00
Total CO_2 Equivalent Emissions without Land-Use Change and Forestry [3]			0.00

[3] The information in these rows is requested to facilitate comparison of data, since Parties differ in the way they report emissions and removals from Land-Use Change and Forestry.

TABLE 8(b) RECALCULATION - EXPLANATORY INFORMATION
(Sheet 1 of 1)

Canada
1998
Submission 2000

Specify the sector and source/sink category[1] where changes in estimates have occurred:		GHG	RECALCULATION DUE TO			
			CHANGES IN:			Addition/removal/ replacement of source/sink categories
			Methods [2]	Emission factors [2]	Activity data [2]	

[1] Enter the identification code of the source/sink category (e.g. 1.B.1) in the first column and the name of the category (e.g. Fugitive Emissions from Solid Fuels) in the second column of the table (see Table 8(a)) .

[2] Explain changes in methods, emission factors and activity data that have resulted in recalculation of the estimate of the source/sink as indicated in Table 8(a). Include relevant changes in the assumptions and coefficients under the "Methods" column.

Documentation box: Use the documentation box to report the justifications of the changes as to improvements in the accuracy, completeness and consistency of the inventory.

Sources and sinks not reported (NE)[1]			
GHG	**Sector[2]**	**Source/sink category [2]**	**Explanation**
CO_2	1. Energy	Fugitive Emissions from Solid Fuel: Coal Mining and Handling - Underground & Surface Mines	Unknown emission rates & activity data
	1. Energy	Fugitive Emissions from Oil and Natural Gas: 1.B.2.a. Oil, iv. Refinin/Storage & v. Distribution of oil products	Unknown activitiy data
	2. Industrial Processes	A. Mineral Products: 5. Asphalt Roofing, 6. Road Paving with Asphalt & 7. Glass Production	Unknown activitiy data
	5. Land-use Change and Forestry	B. Forest and Grassland Conversion	It is not quantitatively known how much biomass loss occurs by what route (e.g. on-site or off-site biomass burning, decay). Because there is insufficient information to make these allocations at this time, only total C emissions from land conversion were estimated.
	5. Land-use Change and Forestry	D. CO_2 Emissions and Removals from soils - Forest Soils	CO_2 fluxes from the soils of the Wood Production Forest are not quantitatively known, neither are there estimates of altered fluxes after natural or anthropogenic disturbances. Total CO_2 emissions from soils associated with forest conversion into agricultural or urban land were provided.
CH_4	1. Energy	Fugitive Emissions from Oil and Natural Gas: 1.B.2.a. Oil, iv. Refinin/Storage & v. Distribution of oil products	Unknown emission rates and activity data
	2. Industrial Processes	B. Chemical Industry: 1. Ammonia Production, 4. Carbide Production (Silicon Carbide & Calcium Carbide) & 6. Other (Carbon Black, Ethylene, Dichloroethylene, Styrene & Methanol)	Unknown emission rates
	2. Industrial Processes	C. Metal Production: 1. Iron and Steel Production (Coke) & 3. Aluminum Production	Unknown emission rates
	2. Industrial Processes	C. Metal Production: 2. Ferroalloys Production	Unknown emission rates & activity data
	2. Industrial Processes	G. Other & Undifferentiated Production	Unknown emission rates
	4. Agriculture	A. Enteric Fermentation, 2. Buffalo	Unknown emission rates & activity data
	5. Land-use Change and Forestry	B. Forest and Grassland Conversion	It is not quantitatively known how much biomass loss occurs through on-site of off-site burning upon Land Conversion. Therefore, estimates of CH4 released are unavailable
	6. Waste	Waste Incineration - MSW	Assumed negligible
	6. Waste	Wastewater Handling - Industrial Wastewater (Wastewater and Sludge) & Domestic/Commercial Wastewaster (Sludge)	Unknown emission rates & activity data
N_2O	2. Industrial Processes	B. Chemical Industry: 1. Ammonia Production & 6. Other (Ethylene)	Unknown emission rates
	2. Industrial Processes	G. Other & Undifferentiated Production	Unknown emission rates
	5. Land-use Change and Forestry	B. Forest and Grassland Conversion	It is not quantitatively known how much biomass loss occurs through on-site of off-site burning upon Land Conversion. Therefore, estimates of N2O released are unavailable.
	6. Waste	Waste Incineration - Biogenic & Sewage Sludge	Assumed negligible
	6. Waste	Wastewater Handling - Industrial Wastewater	Unknown emission rates & activity data
HFCs	2. Industrial Processes	F(p). Consumption of Halocarbons(by chemical) and SF6; Export and Import in products	Unknown activity data: assumed bulk imports only
PFCs	2. Industrial Processes	F(a). Consumption of Halocarbons and SF6 (actual emissions - Tier 2)	Unknown activity data & emission rates
	2. Industrial Processes	F(p). Consumption of Halocarbons(by chemical) and SF6	Unknown activity data & emission rates
SF_6	2. Industrial Processes	F(a). Consumption of Halocarbons and SF6 (actual emissions - Tier 2); 6. Semiconductors & 7. Electrical Equipment	Unknown activity data & emission rates
	2. Industrial Processes	F(p). Consumption of Halocarbons(by chemical) and SF6; Import in Bulk & Products	Unknown activity data & emission rates: assumed bulk imports only
	2. Industrial Processes	C. PFCs and SF6 from Metal Production; SF6 Aluminium Foundries	Unknown activity data & emission rates

Sources and sinks reported elsewhere (IE)[3]				
GHG	**Source/sink category**	**Allocation as per IPCC Guidelines**	**Allocation used by the Party**	**Explanation**
CO_2	Fuel Combustion - Manufacturing Industries and Construction	1.A.2 e. Food Processing, Beverages and Tobacco	1.A.2 f. Other	Only aggregated activity data were available.
	Fuel Combustion - Other	1.A.5 Other (Military)	1.A.3 Transportation Sector & 1.A.4 Other Sectors	Only aggregated activity data were available.
	Fugitive Emissions from Oil and Natural Gas	Fugitive Emissions from Oil and Natural Gas: 1.B.2.a. Oil, I.Exploration	1.B.2.a. Oil, ii. Production	Only aggregated activity data were available.
	Industrial Processes: Chemical Industry	B. Chemical Industry: 4. Carbide Production (Silicon Carbide & Calcium Carbide) & 5. Other (Ethylene)	1.A.2 f. Other	Only aggregated activity data were available.
	Industrial Processes:Metal Production	C. Metal Production: 3. Aluminum Production	1.A.2 f. Other	Only aggregated activity data were available.
	Industrial Processes: Other Production	D. Other Production: 2. Food and Drink	1.A.2 f. Other	Only aggregated activity data were available.
	Cultivation and Liming of Agricultural Soils	Land-use Change and Forestry	Agriculture	IPCC allows the reporting of net CO2 fluxes from agricultural soils in the Agriculture sector or the Land-use Change and Forestry sector. Canada has opted for the former.
	5.E Other anthropogenic fires in the Wood Production Forest (emissions)	LUCF, 5.E "Other"	LUCF, 5.A "Canadian Wood Production Forest"	Biomass loss (hence CO2 emissions) in the Wood Production Forest caused by natural and anthropogenic disturbances are incorporated in the estimates of the "mean annual increment" of forest biomass.
	5.E Prescribed Burning (emissions)	LUCF, 5.E "Other"	LUCF, 5.A, "Slash"	CO2 emissions from prescribed burning are included in the emissions by slash left after harvest and firewood collection.
CH_4	Fuel Combustion - Manufacturing Industries and Construction	1.A.2 e. Food Processing, Beverages and Tobacco	1.A.2 f. Other	Only aggregated activity data were available.
	Fuel Combustion - Other	1.A.5 Other (Military)	1.A.3 Transportation Sector & 1.A.4 Other Sectors	Only aggregated activity data were available.
	Fugitive Emissions from Solid Fuels	1.B.1 a. ii. Underground Mines; Post-Mining Activities	1.B.1.a. i. Underground Mines - Mining Activities	Only aggregated activity data were available.
	Fugitive Emissions from Solid Fuels	1.B.1 a. ii. Surface Mines: Post-Mining Activities	1.B.1 a. ii. Surface Mines: Mining Activities	Only aggregated activity data were available.
	Fugitive Emissions from Oil and Natural Gas	Fugitive Emissions from Oil and Natural Gas: 1.B.2.a. Oil, I.Exploration	1.B.2.a. Oil, ii. Production	Only aggregated activity data were available.
N_2O	Fuel Combustion - Other	1.A.5 Other (Military)	1.A.3 Transportation Sector & 1.A.4 Other Sectors	Only aggregated activity data were available.
	Fuel Combustion - Manufacturing Industries and Construction	1.A.2 e. Food Processing, Beverages and Tobacco	1.A.2 f. Other	Only aggregated activity data were available.
	Wastewater Handling	Domestic and Commercial Wastewater	N_2O from human sewage	CRF allocation
HFCs	Industrial Emissions - HFCs	F(a). Consumption of Halocarbons and SF6 (actual emissions), 6. Semiconductor Manufactures	F(a). Consumption of Halocarbons and SF6 (actual emissions), 5. Solvents	Only aggregated activity data were available.
	Potenial HFCs Consumption	Table 2(1), 6. Semiconductor Manufature and 7. Electrical Equipment	Table 2(1), 5. Sovents	Only aggregated activity data were available.
PFCs				
SF_6				

[1] Please, clearly indicate sources and sinks which are considered in the IPCC Guidelines but are not considered in the submitted inventory. Explain the reason for excluding these sources and sinks, in order to avoid arbitrary interpretations. An entry should be made for each source/sink category for which the indicator "NE" is entered in the sectoral tables.

[2] Indicate omitted source/sink following the IPCC source/sink category structure (e.g. sector: Waste, source category: Wastewater Handling).

[3] Please clearly indicate sources and sinks in the submitted inventory that are allocated to a sector other than that indicated by the IPCC Guidelines. Show the sector indicated in the IPCC Guidelines and the sector to which the source or sink is allocated in the submitted inventory. Explain the reason for reporting these sources and sinks in a different sector. An entry should be made for each source/sink for which the indicator "IE" is used in the sectoral tables.

Additional GHG emissions reported[4]						
GHG	**Source category**	**Emissions (Gg)**	**Estimated GWP value (100-year horizon)**	**Emissions CO_2 equivalent (Gg)**	**Reference to the data source of GWP value**	**Explanation**

[4] Parties are encouraged to provide information on emissions of greenhouse gases whose GWP values have not yet been agreed upon by the COP. Please include such gases in this table if they are considered in the submitted inventory. Provide additional information on the estimation methods used.

TABLE 10 EMISSIONS TRENDS (CO_2)
(Sheet 1 of 5)

Canada
1998
Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Base year[1]	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
	(Gg)										
1. Energy	**0.00**	**425,522.60**	**415,952.43**	**430,379.55**	**428,225.48**	**441,781.36**	**453,938.96**	**466,430.10**	**478,451.52**	**490,213.31**	**0.00**
A. Fuel Combustion (Sectoral Approach)	0.00	415,689.94	405,838.12	419,730.09	416,893.42	429,922.90	440,965.07	452,945.30	464,819.25	476,426.45	0.00
1. Energy Industries		144,599.39	143,299.33	151,415.25	145,493.99	148,410.88	154,327.58	154,517.31	162,940.86	181,201.44	
2. Manufacturing Industries and Construction		56,067.14	53,333.11	52,790.00	49,961.07	53,045.03	53,482.91	55,303.27	55,225.84	53,128.58	
3. Transport		145,833.36	140,611.09	144,669.11	147,814.16	155,224.21	159,440.35	163,927.85	170,334.69	174,251.80	
4. Other Sectors		69,190.05	68,594.59	70,855.72	73,624.20	73,242.79	73,714.23	79,196.87	76,317.86	67,844.63	
5. Other											
B. Fugitive Emissions from Fuels	0.00	9,832.66	10,114.31	10,649.46	11,332.06	11,858.46	12,973.89	13,484.80	13,632.27	13,786.85	0.00
1. Solid Fuels		NI	NI	NI	NI	NI	NI	NI	NI	NI	
2. Oil and Natural Gas		9,832.66	10,114.31	10,649.46	11,332.06	11,858.46	12,973.89	13,484.80	13,632.27	13,786.85	
2. Industrial Processes	**0.00**	**32,724.27**	**33,508.01**	**33,121.36**	**34,886.29**	**35,785.68**	**36,464.45**	**38,065.81**	**38,398.74**	**38,065.75**	**0.00**
A. Mineral Products		8,160.68	6,980.56	6,635.75	6,875.20	7,507.44	7,691.42	8,034.29	8,167.63	8,360.74	
B. Chemical Industry		3,126.54	3,218.71	3,317.38	3,561.96	3,700.33	4,051.22	4,128.22	4,141.79	3,898.29	
C. Metal Production		10,221.52	11,918.25	12,296.95	12,528.29	11,767.27	11,984.32	12,014.51	11,894.66	12,133.11	
D. Other Production											
E. Production of Halocarbons and SF_6											
F. Consumption of Halocarbons and SF_6											
G. Other		11,215.53	11,390.49	10,871.28	11,920.84	12,810.64	12,737.49	13,888.79	14,194.66	13,673.61	
3. Solvent and Other Product Use		**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	
4. Agriculture	**0.00**	**7,255.00**	**6,652.00**	**5,777.00**	**4,662.00**	**4,224.00**	**3,166.00**	**1,784.00**	**1,248.50**	**875.00**	**0.00**
A. Enteric Fermentation		NA	NA	NA	NA	NA	NA	NA	NA	NA	
B. Manure Management		NA	NA	NA	NA	NA	NA	NA	NA	NA	
C. Rice Cultivation		NO	NO	NO	NO	NO	NO	NO	NO	NO	
D. Agricultural Soils [2]		7,255.00	6,652.00	5,777.00	4,662.00	4,224.00	3,166.00	1,784.00	1,248.50	875.00	
E. Prescribed Burning of Savannas		NO	NO	NO	NO	NO	NO	NO	NO	NO	
F. Field Burning of Agricultural Residues		NO	NO	NO	NO	NO	NO	NO	NO	NO	
G. Other											
5. Land-Use Change and Forestry [3]	**0.00**	**-39,141.04**	**-57,269.38**	**-45,351.53**	**-34,578.61**	**-29,728.80**	**-21,128.54**	**-28,885.76**	**-23,624.91**	**-21,833.00**	**0.00**
A. Changes in Forest and Other Woody Biomass Stocks		-45,224.00	-63,839.03	-52,966.60	-43,060.69	-33,243.73	-34,192.50	-37,224.33	-34,695.57	-33,030.00	
B. Forest and Grassland Conversion		1,419.00	1,393.00	1,420.00	1,699.00	2,056.00	2,381.00	2,840.00	3,694.00	3,924.00	
C. Abandonment of Managed Lands		-3,245.00	-3,304.00	-3,271.00	-3,242.00	-3,216.00	-3,183.00	-3,157.00	-3,913.00	-4,008.00	
D. CO_2 Emissions and Removals from Soil		3,526.00	3,776.77	3,137.28	2,841.76	2,630.29	2,391.63	2,635.92	5,270.02	5,261.00	
E. Other		4,382.96	4,703.88	6,328.79	7,183.31	2,044.64	11,474.33	6,019.65	6,019.65	6,020.00	
6. Waste	**0.00**	**253.52**	**256.64**	**260.73**	**264.77**	**267.97**	**271.42**	**274.69**	**277.34**	**276.82**	**0.00**
A. Solid Waste Disposal on Land		NE	NE	NE	NE	NE	NE	NE	NE	NE	
B. Waste-water Handling		NA	NA	NA	NA	NA	NA	NA	NA	NA	
C. Waste Incineration		253.52	256.64	260.73	264.77	267.97	271.42	274.69	277.34	276.82	
D. Other											
7. Other *(please specify)*	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total Emissions/Removals with LUCF [4]	**0.00**	**426,614.35**	**399,099.71**	**424,187.10**	**433,459.92**	**452,330.20**	**472,712.28**	**477,668.84**	**494,751.19**	**507,597.87**	**0.00**
Total Emissions without LUCF[4]	**0.00**	**465,755.39**	**456,369.09**	**469,538.64**	**468,038.53**	**482,059.00**	**493,840.82**	**506,554.60**	**518,376.10**	**529,430.87**	**0.00**
Memo Items:											
International Bunkers	**0.00**	**5,724.08**	**5,581.22**	**5,865.96**	**5,310.23**	**5,649.64**	**5,915.97**	**6,159.04**	**6,037.62**	**6,653.37**	**0.00**
Aviation		2,729.27	2,482.68	2,685.15	2,472.48	2,460.75	2,603.53	3,073.52	2,991.66	2,877.64	
Marine		2,994.81	3,098.54	3,180.81	2,837.75	3,188.89	3,312.44	3,085.52	3,045.96	3,775.73	
Multilateral Operations											
CO_2 Emissions from Biomass		**58,153.26**	**59,959.51**	**62,226.56**	**61,105.73**	**64,536.06**	**66,819.47**	**66,262.59**	**70,290.76**	**62,820.69**	

[1] Fill in the base year adopted by the Party under the Convention, if different from 1990.
[2] See footnote 4 to Summary 1.A of this common reporting format.
[3] Take the net emissions as reported in Summary 1.A of this common reporting format. Please note that for the purposes of reporting, the signs for uptake are always (-) and for emissions (+).
[4] The information in these rows is requested to facilitate comparison of data, since Parties differ in the way they report CO_2 emissions and removals from Land-Use Change and Forestry.

TABLE 10 EMISSIONS TRENDS (CH_4)
(Sheet 2 of 5)

Canada
1998
Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Base year[1]	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
	(Gg)										
Total Emissions	**0.00**	**3,541.73**	**3,668.91**	**3,788.83**	**3,916.06**	**4,018.44**	**4,162.57**	**4,294.18**	**4,317.31**	**4,260.93**	**0.00**
1. Energy	**0.00**	**1,595.92**	**1,665.79**	**1,791.20**	**1,854.46**	**1,932.87**	**2,027.57**	**2,153.18**	**2,150.06**	**2,084.40**	**0.00**
A. Fuel Combustion (Sectoral Approach)	0.00	258.04	261.01	280.01	281.48	277.01	274.81	283.86	284.88	245.16	0.00
1. Energy Industries		1.72	1.71	1.78	1.72	1.75	1.86	1.87	1.88	2.08	
2. Manufacturing Industries and Construction		1.54	1.51	1.54	1.49	1.58	1.74	1.72	1.73	1.72	
3. Transport		24.87	23.72	23.02	22.99	23.43	23.20	23.81	23.48	25.12	
4. Other Sectors		229.91	234.07	253.67	255.29	250.25	248.01	256.46	257.80	216.25	
5. Other											
B. Fugitive Emissions from Fuels	0.00	1,337.88	1,404.78	1,511.19	1,572.98	1,655.86	1,752.76	1,869.32	1,865.17	1,839.23	0.00
1. Solid Fuels		91.16	99.35	87.35	87.32	84.09	81.58	84.13	78.07	64.95	
2. Oil and Natural Gas		1,246.72	1,305.43	1,423.84	1,485.66	1,571.77	1,671.19	1,785.19	1,787.10	1,774.28	
2. Industrial Processes	**0.00**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**0.00**
A. Mineral Products											
B. Chemical Industry											
C. Metal Production											
D. Other Production											
E. Production of Halocarbons and SF_6											
F. Consumption of Halocarbons and SF_6											
G. Other											
3. Solvent and Other Product Use		**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	
4. Agriculture	**0.00**	**980.44**	**987.53**	**972.08**	**1,016.03**	**1,064.59**	**1,099.31**	**1,107.70**	**1,110.69**	**1,097.32**	**0.00**
A. Enteric Fermentation		761.62	769.02	759.54	795.47	833.69	860.89	866.50	874.84	855.42	
B. Manure Management		218.82	218.51	212.54	220.56	230.90	238.42	241.20	235.84	241.89	
C. Rice Cultivation		NO	NO	NO	NO	NO	NO	NO	NO	NO	
D. Agricultural Soils		NA	NA	NA	NA	NA	NA	NA	NA	NA	
E. Prescribed Burning of Savannas		NO	NO	NO	NO	NO	NO	NO	NO	NO	
F. Field Burning of Agricultural Residues		NO	NO	NO	NO	NO	NO	NO	NO	NO	
G. Other											
5. Land-Use Change and Forestry	**0.00**	**65.70**	**86.10**	**75.50**	**72.60**	**37.10**	**47.40**	**41.70**	**41.70**	**41.70**	**0.00**
A. Changes in Forest and Other Woody Biomass Stocks		NA	NA	NA	NA	NA	NA	NA	NA	NA	
B. Forest and Grassland Conversion		NA	NA	NA	NA	NA	NA	NA	NA	NA	
C. Abandonment of Managed Lands		NA	NA	NA	NA	NA	NA	NA	NA	NA	
D. CO_2 Emissions and Removals from Soil		NA	NA	NA	NA	NA	NA	NA	NA	NA	
E. Other		65.70	86.10	75.50	72.60	37.10	47.40	41.70	41.70	41.70	
6. Waste	**0.00**	**899.67**	**929.49**	**950.04**	**972.97**	**983.88**	**988.29**	**991.61**	**1,014.87**	**1,037.52**	**0.00**
A. Solid Waste Disposal on Land		882.25	911.85	932.11	954.96	965.67	969.80	972.90	995.95	1,018.43	
B. Waste-water Handling		16.98	17.19	17.45	17.70	17.90	18.14	18.37	18.59	18.76	
C. Waste Incineration		0.44	0.45	0.49	0.31	0.31	0.34	0.33	0.33	0.33	
D. Other											
7. Other *(please specify)*	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Memo Items:											
International Bunkers	**0.00**	**0.15**	**0.13**	**0.13**	**0.12**	**0.13**	**0.14**	**0.15**	**0.14**	**0.14**	**0.00**
Aviation		0.08	0.07	0.08	0.07	0.07	0.08	0.09	0.09	0.09	
Marine		0.07	0.06	0.05	0.05	0.05	0.06	0.06	0.05	0.05	
Multilateral Operations											
CO_2 Emissions from Biomass											

TABLE 10 EMISSIONS TRENDS (N_2O)
(Sheet 3 of 5)

Canada
1998
Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Base year[1]	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
	(Gg)										
Total Emissions	**0.00**	**202.56**	**202.01**	**202.11**	**206.93**	**220.47**	**223.05**	**231.45**	**225.89**	**209.33**	**0.00**
1. Energy	**0.00**	**27.96**	**28.44**	**30.61**	**32.61**	**35.13**	**36.24**	**36.32**	**36.81**	**35.94**	**0.00**
A. Fuel Combustion (Sectoral Approach)	0.00	27.96	28.44	30.61	32.61	35.13	36.24	36.32	36.81	35.94	0.00
1. Energy Industries		2.58	2.63	2.74	2.60	2.72	2.82	2.85	2.99	3.22	
2. Manufacturing Industries and Construction		1.43	1.45	1.46	1.38	1.44	1.62	1.55	1.57	1.62	
3. Transport		20.77	21.14	22.93	25.10	27.50	28.35	28.33	28.66	28.08	
4. Other Sectors		3.18	3.23	3.48	3.52	3.46	3.45	3.59	3.58	3.03	
5. Other											
B. Fugitive Emissions from Fuels	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1. Solid Fuels		NA	NA	NA	NA	NA	NA	NA	NA	NA	
2. Oil and Natural Gas		NA	NA	NA	NA	NA	NA	NA	NA	NA	
2. Industrial Processes	**0.00**	**37.08**	**34.73**	**34.60**	**31.80**	**37.85**	**37.12**	**39.56**	**34.43**	**18.83**	**0.00**
A. Mineral Products		NA	NA	NA	NA	NA	NA	NA	NA	NA	
B. Chemical Industry		37.08	34.73	34.60	31.80	37.85	37.12	39.56	34.43	18.83	
C. Metal Production		NA	NA	NA	NA	NA	NA	NA	NA	NA	
D. Other Production											
E. Production of Halocarbons and SF_6											
F. Consumption of Halocarbons and SF_6											
G. Other											
3. Solvent and Other Product Use		**1.35**	**1.37**	**1.39**	**1.41**	**1.42**	**1.44**	**1.46**	**1.47**	**1.47**	
4. Agriculture	**0.00**	**129.69**	**129.96**	**128.25**	**133.82**	**140.54**	**141.57**	**148.10**	**147.14**	**147.04**	**0.00**
A. Enteric Fermentation		NA	NA	NA	NA	NA	NA	NA	NA	NA	
B. Manure Management		13.69	13.91	14.16	14.57	15.45	15.96	16.20	16.50	16.26	
C. Rice Cultivation		NO	NO	NO	NO	NO	NO	NO	NO	NO	
D. Agricultural Soils		116.00	116.04	114.08	119.25	125.09	125.61	131.91	130.64	130.78	
E. Prescribed Burning of Savannas		NO	NO	NO	NO	NO	NO	NO	NO	NO	
F. Field Burning of Agricultural Residues		NO	NO	NO	NO	NO	NO	NO	NO	NO	
G. Other											
5. Land-Use Change and Forestry	**0.00**	**3.50**	**4.50**	**4.20**	**4.20**	**2.40**	**3.50**	**2.80**	**2.80**	**2.80**	**0.00**
A. Changes in Forest and Other Woody Biomass Stocks		NA	NA	NA	NA	NA	NA	NA	NA	NA	
B. Forest and Grassland Conversion		NA	NA	NA	NA	NA	NA	NA	NA	NA	
C. Abandonment of Managed Lands		NA	NA	NA	NA	NA	NA	NA	NA	NA	
D. CO_2 Emissions and Removals from Soil		NA	NA	NA	NA	NA	NA	NA	NA	NA	
E. Other		3.50	4.50	4.20	4.20	2.40	3.50	2.80	2.80	2.80	
6. Waste	**0.00**	**2.98**	**3.01**	**3.06**	**3.10**	**3.14**	**3.17**	**3.21**	**3.25**	**3.25**	**0.00**
A. Solid Waste Disposal on Land		NA	NA	NA	NA	NA	NA	NA	NA	NA	
B. Waste-water Handling		2.81	2.84	2.88	2.92	2.95	2.99	3.03	3.06	3.06	
C. Waste Incineration		0.17	0.17	0.18	0.18	0.18	0.18	0.19	0.19	0.19	
D. Other											
7. Other *(please specify)*	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Memo Items:											
International Bunkers	**0.00**	**0.70**	**0.70**	**0.73**	**0.66**	**0.71**	**0.74**	**1.90**	**1.90**	**0.83**	**0.00**
Aviation		0.27	0.24	0.26	0.24	0.24	0.26	1.14	1.14	0.28	
Marine		0.44	0.45	0.46	0.41	0.47	0.48	0.76	0.76	0.55	
Multilateral Operations											
CO_2 Emissions from Biomass											

TABLE 10 EMISSION TRENDS (HFCs, PFCs and SF_6)
(Sheet 4 of 5)

Canada
1998
Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Base year[1]	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
	(Gg)										
Emissions of HFCs[5] - CO_2 equivalent (Gg)	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**479.41**	**885.95**	**864.07**	**864.07**	**0.00**
HFC-23							0.00	0.00	0.00	0.00	
HFC-32							0.00	0.00	0.00	0.00	
HFC-41								0.00	0.00	0.00	
HFC-43-10mee								0.00	0.00	0.00	
HFC-125							0.02	0.03	0.05	0.05	
HFC-134								0.00	0.00	0.00	
HFC-134a							0.28	0.54	0.41	0.41	
HFC-152a							0.00	0.02	0.04	0.04	
HFC-143								0.00	0.00	0.00	
HFC-143a							0.01	0.02	0.04	0.04	
HFC-227ea							0.01	0.01	0.00	0.00	
HFC-236fa								0.00	0.00	0.00	
HFC-245ca								0.00	0.00	0.00	
Emissions of PFCs[5] - CO_2 equivalent (Gg)	**0.00**	**5,975.11**	**6,318.31**	**6,600.45**	**7,399.29**	**6,912.47**	**6,015.90**	**5,878.68**	**5,962.64**	**6,023.16**	**0.00**
CF_4		0.81	0.87	0.90	1.02	0.95	0.83	0.81	0.82	0.83	
C_2F_6		0.07	0.08	0.08	0.09	0.08	0.07	0.07	0.07	0.07	
C_3F_8											
C_4F_{10}											
c-C_4F_8											
C_5F_{12}											
C_6F_{14}											
Emissions of SF_6[5] - CO_2 equivalent (Gg)	**0.00**	**2,870.39**	**3,260.37**	**2,172.51**	**2,009.99**	**2,037.00**	**1,879.26**	**1,362.30**	**1,390.19**	**1,536.21**	**0.00**
SF_6		0.12	0.14	0.09	0.08	0.09	0.08	0.06	0.06	0.06	

Chemical	GWP
HFCs	
HFC-23	11700
HFC-32	650
HFC-41	150
HFC-43-10mee	1300
HFC-125	2800
HFC-134	1000
HFC-134a	1300
HFC-152a	140
HFC-143	300
HFC-143a	3800
HFC-227ea	2900
HFC-236fa	6300
HFC-245ca	560
PFCs	
CF_4	6500
C_2F_6	9200
C_3F_8	7000
C_4F_{10}	7000
c-C_4F_8	8700
C_5F_{12}	7500
C_6F_{14}	7400
SF_6	23900

[5] Enter information on the actual emissions. Where estimates are only available for the potential emissions, specify this in a comment to the corresponding cell. Only in this row the emissions are expressed as CO_2 equivalent emissions in order to facilitate data flow among spreadsheets.

TABLE 10 EMISSION TRENDS (SUMMARY)
(Sheet 5 of 5)

Canada
1998
Submission 2000

GREENHOUSE GAS EMISSIONS	Base year[1]	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
	CO_2 equivalent (Gg)										
Net CO_2 emissions/removals	0.00	426,614.35	399,099.71	424,187.10	433,459.92	452,330.20	472,712.28	477,668.84	494,751.19	507,597.87	0.00
CO_2 emissions (without LUCF) [6]	0.00	465,755.39	456,369.09	469,538.64	468,038.53	482,059.00	493,840.82	506,554.60	518,376.10	529,430.87	0.00
CH_4	0.00	74,376.36	77,047.14	79,565.43	82,237.17	84,387.15	87,413.90	90,177.77	90,663.53	89,479.55	0.00
N_2O	0.00	62,792.66	62,623.36	62,653.72	64,149.03	68,346.41	69,144.45	71,749.44	70,025.77	64,893.77	0.00
HFCs	0.00	0.00	0.00	0.00	0.00	0.00	479.41	885.95	864.07	864.07	0.00
PFCs	0.00	5,975.11	6,318.31	6,600.45	7,399.29	6,912.47	6,015.90	5,878.68	5,962.64	6,023.16	0.00
SF_6	0.00	2,870.39	3,260.37	2,172.51	2,009.99	2,037.00	1,879.26	1,362.30	1,390.19	1,536.21	0.00
Total (with net CO_2 emissions/removals)	**0.00**	**572,628.87**	**548,348.89**	**575,179.21**	**589,255.40**	**614,013.23**	**637,645.20**	**647,722.99**	**663,657.40**	**670,394.64**	**0.00**
Total (without CO_2 from LUCF) [6]	**0.00**	**611,769.91**	**605,618.27**	**620,530.75**	**623,834.02**	**643,742.03**	**658,773.75**	**676,608.75**	**687,282.30**	**692,227.64**	**0.00**

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Base year[1]	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
	CO_2 equivalent (Gg)										
1. Energy	0.00	467,703.30	459,751.87	477,484.45	477,276.88	493,260.97	507,751.30	522,906.63	535,012.43	545,128.31	0.00
2. Industrial Processes	0.00	53,065.08	53,853.20	52,621.26	54,152.53	56,469.05	56,347.30	58,455.04	57,288.04	52,325.27	0.00
3. Solvent and Other Product Use	0.00	418.69	423.65	430.02	436.02	440.65	446.05	451.43	456.30	456.96	0.00
4. Agriculture	0.00	68,048.49	67,676.37	65,947.70	67,483.29	70,146.89	70,139.17	70,957.82	70,186.08	69,501.29	0.00
5. Land-Use Change and Forestry [7]	0.00	-36,676.34	-54,066.28	-42,464.03	-31,752.01	-28,205.70	-19,048.14	-27,142.06	-21,881.21	-20,089.30	0.00
6. Waste	0.00	20,069.64	20,710.08	21,159.82	21,658.69	21,901.38	22,009.52	22,094.13	22,595.76	23,072.11	0.00
7. Other	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

[6] The information in these rows is requested to facilitate comparison of data, since Parties differ in the way they report CO_2 emissions and removals from Land-Use Change and Forestry.
[7] Net emissions.

TABLE 11 CHECK LIST OF REPORTED INVENTORY INFORMATION[1]

Party: Canada **Year:** 1998

Contact info:

Focal point for national GHG inventories:	Environment Canada (Art Jaques)			
Address:	351 St Joseph Blvd			
Telephone:	(819) 994-3098	Fax: (819) 953-9542	E-mail:	Art.jaques@ec.gc.ca
Main institution preparing the inventory:	Environment Canada (Art Jaques)			

General info:

Date of submission:			
Base years:	1990	PFCs, HFCs, SF_6:	
Year covered in the submission:	1990-1998		
Gases covered:	CO_2, CH_4, N_2O, PFC's, HFC's, & SF_6		
Omissions in geographic coverage:	None		

Tables:

	Energy	Ind. Processes	Solvent Use	LUCF	Agriculture	Waste
Sectoral report tables:	☑	☑	☑	☑	☑	☑
Sectoral background data tables:	☑	☑	☑	☑	☑	☑
Summary 1 (IPCC Summary tables):	IPCC Table 7A:		☑	IPCC Table 7B:		☑
Summary 2 (CO_2 equivalent emissions):			☑			
Summary 3 (Methods/Emission factors):			☑			
Uncertainty:	IPCC Table 8A:		☑	National information:		☑
Recalculation tables:			☑			
Completeness table:			☑			
Trend table:			☑			

CO_2

	Worksheet 1-1	Percentage of difference	Explanation of differences
Comparison of CO_2 from fuel combustion:	☑	10.51	☑

Recalculation:

	Energy	Ind.Processes	Solvent Use	LUCF	Agriculture	Waste
CO_2	☐	☐	☐	☐	☐	☐
CH_4	☐	☐	☐	☐	☐	☐
N_2O	☐	☐	☐	☐	☐	☐
HFCs, PFCs, SF_6		☐				
Explanations:	☐	☐	☐	☐	☐	☐
Recalculation tables for all recalculated years:			☐			
Full CRF for the recalculated base year:			☐			

HFCs, PFCs, SF_6:

	HFCs		PFCs		SF_6	
Disaggregation by species:	☑		☑			
Production of Halocarbons/SF_6:	☐		☐		☐	
	Actual	Potential	Actual	Potential	Actual	Potential
Consumption of Halocarbons/SF_6:	☑	☑	☑	☐	☑	☐
Potential/Actual emission ratio:	1.18		0.00		0.00	

Reference to National Inventory Report and/or national inventory web site:	National inventory report is included

CRF - Common Reporting Format.
LUCF - Land-Use Change and Forestry.

[1] For each omission, give an explanation for the reasons by inserting a comment to the corresponding cell.

Appendix 2b

Common Reporting Format – 1990

TABLE 1 SECTORAL REPORT FOR ENERGY
(Sheet 1 of 2)

Canada
1990
Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO_2	CH_4	N_2O	NO_X	CO	NMVOC	SO_2
	(Gg)						
Total Energy	**425,522.60**	**1,595.92**	**27.96**	**0.00**	**0.00**	**0.00**	**0.00**
A. Fuel Combustion Activities (Sectoral Approach)	**415,689.94**	**258.04**	**27.96**	**0.00**	**0.00**	**0.00**	**0.00**
1. Energy Industries	**144,599.39**	**1.72**	**2.58**	**0.00**	**0.00**	**0.00**	**0.00**
a. Public Electricity and Heat Production	94,718.99	0.87	2.30	NE	NE	NE	NE
b. Petroleum Refining	26,276.15	0.28	0.03	NE	NE	NE	NE
c. Manufacture of Solid Fuels and Other Energy Industries	23,604.25	0.58	0.26	NE	NE	NE	NE
2. Manufacturing Industries and Construction	**56,067.14**	**1.54**	**1.43**	**0.00**	**0.00**	**0.00**	**0.00**
a. Iron and Steel	6,406.51	0.19	0.40	NE	NE	NE	NE
b. Non-Ferrous Metals	3,243.75	0.04	0.07	NE	NE	NE	NE
c. Chemicals	7,017.94	0.17	0.07	NE	NE	NE	NE
d. Pulp, Paper and Print	13,334.60	0.50	0.50	NE	NE	NE	NE
e. Food Processing, Beverages and Tobacco	0.00	0.00	0.00	NE	NE	NE	NE
f. Other *(please specify)*	26,064.34	0.64	0.39	0.00	0.00	0.00	0.00
3. Transport	**145,833.36**	**24.87**	**20.77**	**0.00**	**0.00**	**0.00**	**0.00**
a. Civil Aviation	10,384.68	0.66	1.02	NE	NE	NE	NE
b. Road Transportation	102,893.83	16.67	11.99	NE	NE	NE	NE
c. Railways	6,314.76	0.35	2.54	NE	NE	NE	NE
d. Navigation	4,732.58	0.35	1.00	NE	NE	NE	NE
e. Other Transportation *(please specify)*	21,507.51	6.84	4.22	0.00	0.00	0.00	0.00

TABLE 1 SECTORAL REPORT FOR ENERGY
(Sheet 2 of 2)

Canada
1990
Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO_2	CH_4	N_2O	NO_X	CO	NMVOC	SO_2
	(Gg)						
4. Other Sectors	**69,190.05**	**229.91**	**3.18**	**0.00**	**0.00**	**0.00**	**0.00**
a. Commercial/Institutional	25,583.22	0.50	0.22	NE	NE	NE	NE
b. Residential	41,204.50	229.37	2.92	NE	NE	NE	NE
c. Agriculture/Forestry/Fisheries	2,402.32	0.04	0.04	NE	NE	NE	NE
5. Other *(please specify)* [1]	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
a. Stationary	0.00	0.00	0.00	0.00	0.00	0.00	0.00
b. Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00
B. Fugitive Emissions from Fuels	**9,832.66**	**1,337.88**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
1. Solid Fuels	**0.00**	**91.16**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
a. Coal Mining	0.00	91.16	NA	NE	NE	NE	
b. Solid Fuel Transformation	NI	NI	NA	NE	NE	NE	NE
c. Other *(please specify)*	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2. Oil and Natural Gas	**9,832.66**	**1,246.72**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
a. Oil	26.89	406.82		NE	NE	NE	NE
b. Natural Gas	18.71	816.28				NE	NE
c. Venting and Flaring	9,787.05	23.61	0.00	0.00	0.00	0.00	0.00
Venting	4,499.30	0.00				NE	NE
Flaring	5,287.75	23.61	0.00	NE	NE	NE	NE
d. Other *(please specify)*	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Memo Items: [2]							
International Bunkers	**5,723.55**	**0.15**	**0.70**	**0.00**	**0.00**	**0.00**	**0.00**
Aviation	2,729.01	0.08	0.27	NE	NE	NE	NE
Marine	2,994.54	0.07	0.44	NE	NE	NE	NE
Multilateral Operations	0.00	0.00	0.00	NE	NE	NE	NE
CO_2 Emissions from Biomass	**58,153.26**						

[1] Include military fuel use under this category.

[2] Please do not include in energy totals.

TABLE 1.A(a) SECTORAL BACKGROUND DATA FOR ENERGY Canada
Fuel Combustion Activities - Sectoral Approach 1990
(Sheet 1 of 4) Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	AGGREGATE ACTIVITY DATA		IMPLIED EMISSION FACTORS [2]				EMISSIONS		
	Consumption		CO_2	CH_4	N_2O		CO_2	CH_4	N_2O
	(TJ)	[1]	(t/TJ)	(kg/TJ)	(kg/TJ)		(Gg)	(Gg)	(Gg)
1.A. Fuel Combustion	**7,645,442.21**	GCV					**415,689.94**	**258.04**	**27.96**
Liquid Fuels	3,115,441.77	GCV	67.58	7.53	6.71		210,535.34	23.45	20.92
Solid Fuels	1,099,890.81	GCV	78.52	0.72	2.50		86,362.97	0.79	2.75
Gaseous Fuels	2,763,972.12	GCV	42.21	1.39	0.47		116,672.74	3.85	1.30
Biomass	630,781.01	GCV	92.19	363.01	4.74	[3]	58,153.26	228.98	2.99
Other Fuels	35,356.50	GCV	59.93	27.42	0.00		2,118.90	0.97	0.00
1.A.1. Energy Industries	**2,099,526.00**	GCV					**144,599.39**	**1.72**	**2.58**
Liquid Fuels	555,775.00	GCV	67.80	0.72	0.25		37,683.41	0.40	0.14
Solid Fuels	882,578.00	GCV	89.85	0.72	2.41		79,302.23	0.64	2.13
Gaseous Fuels	661,173.00	GCV	41.76	1.04	0.47		27,613.75	0.69	0.31
Biomass	0.00	GCV	0.00	0.00	0.00	[3]	0.00	0.00	0.00
Other Fuels	0.00	GCV	0.00	0.00	0.00		0.00	0.00	0.00
a. Public Electricity and Heat Production	1,123,450.00	GCV					94,718.99	0.87	2.30
Liquid Fuels	160,271.00	GCV	74.34	1.15	0.88		11,915.02	0.18	0.14
Solid Fuels	875,267.00	GCV	89.61	0.72	2.41		78,429.03	0.63	2.11
Gaseous Fuels	87,912.00	GCV	49.77	0.59	0.53		4,374.95	0.05	0.05
Biomass	0.00	GCV	0.00	0.00	0.00	[3]	0.00	0.00	0.00
Other Fuels		GCV	0.00	0.00	0.00				
b. Petroleum Refining	417,515.00	GCV					26,276.15	0.28	0.03
Liquid Fuels	368,748.00	GCV	64.68	0.58	0.00		23,849.44	0.21	0.00
Solid Fuels	0.00	GCV	0.00	0.00	0.00		0.00	0.00	0.00
Gaseous Fuels	48,767.00	GCV	49.76	1.27	0.53		2,426.70	0.06	0.03
Biomass	0.00	GCV	0.00	0.00	0.00	[3]	0.00	0.00	0.00
Other Fuels		GCV	0.00	0.00	0.00				
c. Manufacture of Solid Fuels and Other Energy Industries	558,561.00	GCV					23,604.25	0.58	0.26
Liquid Fuels	26,756.00	GCV	71.72	0.00	0.00		1,918.95	0.00	0.00
Solid Fuels	7,311.00	GCV	119.44	0.29	2.16		873.20	0.00	0.02
Gaseous Fuels	524,494.00	GCV	39.68	1.10	0.46		20,812.10	0.57	0.24
Biomass	0.00	GCV	0.00	0.00	0.00	[3]	0.00	0.00	0.00
Other Fuels		GCV	0.00	0.00	0.00				

[1] Activity data should be calculated using net calorific values (NCV) as specified by the IPCC Guidelines. If gross calorific values (GCV) were used, please indicate this by replacing "NCV" with "GCV" in this column.

[2] Accurate estimation of CH_4 and N_2O emissions depends on combustion conditions, technology, and emission control policy, as well as fuel characteristics. Therefore, caution should be used when comparing the implied emission factors.

[3] Carbon dioxide emissions from biomass are reported under Memo Items. The content of the cells is not included in the totals.

Note: For the coverage of fuel categories, please refer to the IPCC Guidelines (Volume 1. Reporting Instructions - Common Reporting Framework, section 1.2, p. 1.19). If some derived gases (e.g. gas work gas, coke oven gas, blast gas, oxygen steel furnace gas, etc.) are considered, Parties should provide information on the allocation of these derived gases under the above fuel categories (liquid, soild, gaseous, biomass, other fuels) in the documentation box at the end of sheet 4 of this table.

TABLE 1.A(a) SECTORAL BACKGROUND DATA FOR ENERGY Canada
Fuel Combustion Activities - Sectoral Approach 1990
(Sheet 2 of 4) Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	AGGREGATE ACTIVITY DATA		IMPLIED EMISSION FACTORS [2]				EMISSIONS		
	Consumption		CO_2	CH_4	N_2O		CO_2	CH_4	N_2O
	(TJ)	[1]	(t/TJ)	(kg/TJ)	(kg/TJ)		(Gg)	(Gg)	(Gg)
1.A.2 Manufacturing Industries and Construction	**1,923,467.20**	GCV					**56,067.14**	**1.54**	**1.43**
Liquid Fuels	300,834.42	GCV	45.07	0.23	0.01		13,557.22	0.07	0.00
Solid Fuels	215,110.81	GCV	31.93	0.69	2.76		6,869.26	0.15	0.59
Gaseous Fuels	1,029,263.96	GCV	34.63	0.94	0.41		35,640.66	0.97	0.42
Biomass	378,258.00	GCV	17.50	0.92	1.11	[3]	6,619.60	0.35	0.42
Other Fuels	0.00	GCV	0.00	0.00	0.00		0.00	0.00	0.00
a. Iron and Steel	99,908.00	GCV					6,406.51	0.19	0.40
Liquid Fuels	11,619.00	GCV	74.05	0.00	0.00		860.37	0.00	0.00
Solid Fuels	31,892.00	GCV	85.91	3.73	11.65		2,739.87	0.12	0.37
Gaseous Fuels	56,397.00	GCV	49.76	1.27	0.53		2,806.28	0.07	0.03
Biomass	0.00	GCV	0.00	0.00	0.00	[3]	0.00	0.00	0.00
Other Fuels		GCV	0.00	0.00	0.00				
b. Non-Ferrous Metals	49,637.00	GCV					3,243.75	0.04	0.07
Liquid Fuels	10,349.00	GCV	77.26	0.45	0.01		799.57	0.00	0.00
Solid Fuels	14,351.00	GCV	83.85	0.53	3.86		1,203.38	0.01	0.06
Gaseous Fuels	24,937.00	GCV	49.76	1.27	0.53		1,240.80	0.03	0.01
Biomass	0.00	GCV	0.00	0.00	0.00	[3]	0.00	0.00	0.00
Other Fuels		GCV	0.00	0.00	0.00				
c. Chemicals	141,035.00	GCV					7,017.94	0.17	0.07
Liquid Fuels	7,830.00	GCV	49.69	0.16	0.00		389.06	0.00	0.00
Solid Fuels	0.00	GCV	0.00	0.00	0.00		0.00	0.00	0.00
Gaseous Fuels	133,205.00	GCV	49.76	1.27	0.53		6,628.88	0.17	0.07
Biomass	0.00	GCV	0.00	0.00	0.00	[3]	0.00	0.00	0.00
Other Fuels		GCV	0.00	0.00	0.00				
d. Pulp, Paper and Print	595,314.00	GCV					13,334.60	0.50	0.50
Liquid Fuels	98,018.00	GCV	74.04	0.00	0.00		7,257.59	0.00	0.00
Solid Fuels	4,147.00	GCV	86.79	0.68	5.02		359.94	0.00	0.02
Gaseous Fuels	114,891.00	GCV	49.76	1.27	0.53		5,717.08	0.15	0.06
Biomass	378,258.00	GCV	17.50	0.92	1.11	[3]	6,619.60	0.35	0.42
Other Fuels		GCV	0.00	0.00	0.00				
e. Food Processing, Beverages and Tobacco	0.00	GCV					0.00	0.00	0.00
Liquid Fuels	IE	GCV	0.00	0.00	0.00		IE	IE	IE
Solid Fuels	IE	GCV	0.00	0.00	0.00		IE	IE	IE
Gaseous Fuels	IE	GCV	0.00	0.00	0.00		IE	IE	IE
Biomass	IE	GCV	0.00	0.00	0.00	[3]	IE	IE	IE
Other Fuels		GCV	0.00	0.00	0.00				
f. Other *(please specify)*	1,037,573.20	GCV					26,064.34	0.64	0.39
Liquid Fuels	173,018.42	GCV	24.57	0.36	0.01		4,250.64	0.06	0.00
Solid Fuels	164,720.81	GCV	15.58	0.12	0.88		2,566.07	0.02	0.15
Gaseous Fuels	699,833.96	GCV	27.50	0.79	0.35		19,247.63	0.55	0.24
Biomass	0.00	GCV	0.00	0.00	0.00	[3]	0.00	0.00	0.00
Other Fuels		GCV	0.00	0.00	0.00				

TABLE 1.A(a) SECTORAL BACKGROUND DATA FOR ENERGY Canada
Fuel Combustion Activities - Sectoral Approach 1990
(Sheet 3 of 4) Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	AGGREGATE ACTIVITY DATA		IMPLIED EMISSION FACTORS [2]				EMISSIONS		
	Consumption		CO_2	CH_4	N_2O		CO_2	CH_4	N_2O
	(TJ)	[1]	(t/TJ)	(kg/TJ)	(kg/TJ)		(Gg)	(Gg)	(Gg)
1.A.3 Transport	**2,152,379.00**	GCV					**145,833.36**	**24.87**	**20.77**
Gasoline	1,251,278.51	GCV	68.33	11.32	9.65		85,496.04	14.16	12.07
Diesel	730,927.84	GCV	70.47	11.79	11.80		51,512.09	8.62	8.62
Natural Gas	134,816.16	GCV	49.74	8.35	0.54		6,706.34	1.13	0.07
Solid Fuels	0.00	GCV	0.00	0.00	0.00		0.00	0.00	0.00
Biomass	0.00	GCV	0.00	0.00	0.00	[3]	0.00	0.00	0.00
Other Fuels	35,356.50	GCV	59.93	27.42	0.00		2,118.90	0.97	0.00
a. Civil Aviation	148,159.95	GCV					10,384.68	0.66	1.02
Aviation Gasoline	5,353.14	GCV	69.51	65.33	6.86		372.10	0.35	0.04
Jet Kerosene	142,806.81	GCV	70.11	2.20	6.87		10,012.58	0.31	0.98
b. Road Transportation	1,502,633.51	GCV					102,893.83	16.67	11.99
Gasoline	1,103,118.56	GCV	68.09	12.23	10.02		75,111.36	13.50	11.05
Diesel Oil	362,434.30	GCV	70.58	3.39	2.59		25,580.29	1.23	0.94
Natural Gas	1,724.16	GCV	48.30	565.26	1.54		83.28	0.97	0.00
Biomass		GCV	0.00	0.00	0.00	[3]			
Other Fuels *(please specify)*	35,356.50	GCV					2,118.90	0.97	0.00
Propane	35,356.50	GCV	59.93	27.42	0.00		2,118.90	0.97	
c. Railways	89,470.71	GCV					6,314.76	0.35	2.54
Solid Fuels		GCV	0.00	0.00	0.00				
Liquid Fuels	89,470.71	GCV	70.58	3.88	28.44		6,314.76	0.35	2.54
Other Fuels *(please specify)*	0.00	GCV					0.00	0.00	0.00
		GCV	0.00	0.00	0.00				
d. Navigation	65,617.53	GCV					4,732.58	0.35	1.00
Coal		GCV	0.00	0.00	0.00				
Residual Oil	29,223.52	GCV	74.05	7.19	1.92		2,163.93	0.21	0.06
Gas/Diesel Oil	36,394.01	GCV	70.58	3.88	25.85		2,568.66	0.14	0.94
Other Fuels *(please specify)*	0.00	GCV					0.00	0.00	0.00
		GCV	0.00	0.00	0.00				
e. Other Transportation	346,497.31	GCV					21,507.51	6.84	4.22
Liquid Fuels	213,405.31	GCV	69.75	31.36	19.42		14,884.45	6.69	4.14
Solid Fuels		GCV	0.00	0.00	0.00				
Gaseous Fuels	133,092.00	GCV	49.76	1.14	0.53		6,623.05	0.15	0.07

TABLE 1.A(a) SECTORAL BACKGROUND DATA FOR ENERGY Canada
Fuel Combustion Activities - Sectoral Approach 1990
(Sheet 4 of 4) Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	AGGREGATE ACTIVITY DATA		IMPLIED EMISSION FACTORS [2]				EMISSIONS		
	Consumption		CO_2	CH_4	N_2O		CO_2	CH_4	N_2O
	(TJ)	[1]	(t/TJ)	(kg/TJ)	(kg/TJ)		(Gg)	(Gg)	(Gg)
1.A.4 Other Sectors	**1,470,070.01**	GCV					**69,190.05**	**229.91**	**3.18**
Liquid Fuels	276,626.00	GCV	80.57	0.74	0.28		22,286.58	0.21	0.08
Solid Fuels	2,202.00	GCV	86.96	2.00	14.66		191.48	0.00	0.03
Gaseous Fuels	938,719.00	GCV	49.76	1.14	0.53		46,711.98	1.07	0.50
Biomass	252,523.01	GCV	204.08	905.39	10.18	[3]	51,533.66	228.63	2.57
Other Fuels	0.00	GCV	0.00	0.00	0.00		0.00	0.00	0.00
a. Commercial/Institutional	464,533.00	GCV					25,583.22	0.50	0.22
Liquid Fuels	77,192.00	GCV	81.65	0.73	0.24		6,302.76	0.06	0.02
Solid Fuels	204.00	GCV	78.92	0.52	3.83		16.10	0.00	0.00
Gaseous Fuels	387,137.00	GCV	49.76	1.14	0.53		19,264.36	0.44	0.20
Biomass	0.00	GCV	0.00	0.00	0.00	[3]	0.00	0.00	0.00
Other Fuels		GCV	0.00	0.00	0.00				
b. Residential	969,287.01	GCV					41,204.50	229.37	2.92
Liquid Fuels	186,355.00	GCV	79.07	0.73	0.30		14,734.50	0.14	0.06
Solid Fuels	1,998.00	GCV	87.78	0.69	5.07		175.38	0.00	0.01
Gaseous Fuels	528,411.00	GCV	49.76	1.14	0.53		26,294.62	0.60	0.28
Biomass	252,523.01	GCV	204.08	905.39	10.18	[3]	51,533.66	228.63	2.57
Other Fuels		GCV	0.00	0.00	0.00				
c. Agriculture/Forestry/Fisheries	36,250.00	GCV					2,402.32	0.04	0.04
Liquid Fuels	13,079.00	GCV	95.52	1.01	0.28		1,249.32	0.01	0.00
Solid Fuels	0.00	GCV	0.00	0.00	0.00		0.00	0.00	0.02
Gaseous Fuels	23,171.00	GCV	49.76	1.14	0.53		1,153.00	0.03	0.01
Biomass	0.00	GCV	0.00	0.00	0.00	[3]	0.00	0.00	0.00
Other Fuels		GCV	0.00	0.00	0.00				
1.A.5 Other (Not elsewhere specified)[4]	**0.00**	GCV					**0.00**	**0.00**	**0.00**
Liquid Fuels	IE	GCV	0.00	0.00	0.00		IE	IE	IE
Solid Fuels	IE	GCV	0.00	0.00	0.00		IE	IE	IE
Gaseous Fuels	IE	GCV	0.00	0.00	0.00		IE	IE	IE
Biomass		GCV	0.00	0.00	0.00	[3]			
Other Fuels		GCV	0.00	0.00	0.00				

[4] Include military fuel use under this category.

Documentation Box:

Sheet 2 of 4 (1.A (2)s2):

f. Other - includes manufacutring and construction activities

[4] 1.A.5. Military fuel use aggrated activity data and emissions are reported in 1.A.3 Transport Sectors and 1.A.4. Other Sectors.

NOx, CO, NMVOC, & SO_2: For all sectors - emissions are not presently available.

TABLE 1.A(b) SECTORAL BACKGROUND DATA FOR ENERGY Canada

CO_2 from Fuel Combustion Activities - Reference Approach (IPCC Worksheet 1-1) 1990

(Sheet 1 of 1) Submission 2000

FUEL TYPES			Unit	Production	Imports	Exports	International bunkers	Stock change	Apparent consumption	Conversion factor [1] (TJ/Unit)	[1]	Apparent consumption (TJ)	Carbon emission factor (t C/TJ)	Carbon content (Gg C)	Carbon stored (Gg C)	Net carbon emissions (Gg C)	Fraction of carbon oxidized	Actual CO_2 emissions (Gg CO_2)
Liquid Fossil	Primary Fuels	Crude Oil	Ml	107,788.4	31,112.1	48,725.5		500.2	89,674.80	38.51	NCV	3,453,466.22	20.00	69,069.32	0.00	69,069.32	99.0%	250,721.65
		Orimulsion	NA	0.0	0.0	0.0		0.0	0.00	NA	NCV	0.00	NA	0.00	0.00	0.00	NA	NA
		Natural Gas Liquids	Ml	16,714.5	43.2	6,940.6		100.1	9,717.00	21.41	NCV	208,013.26	16.46	3,423.61	0.00	3,423.61	99.5%	12,490.47
	Secondary Fuels	Gasoline	$m^3 \times 10^3$		1,000.2	3,866.7	0.0	-392.3	-2,474.20	33.38	NCV	-82,601.07	18.90	-1,561.16	0.00	-1,561.16	99.0%	-5,667.01
		Jet Kerosene	$m^3 \times 10^3$		789.0	1,001.6	1,070.3	108.9	-1,391.80	36.00	NCV	-50,107.54	19.50	-977.10	0.00	-977.10	99.0%	-3,546.86
		Other Kerosene	$m^3 \times 10^3$		246.6	107.9	0.0	-68.4	207.10	36.13	NCV	7,482.76	19.60	146.66	0.00	146.66	99.0%	532.38
		Shale Oil	NA		0.0	0.0		0.0	0.00	NA	NCV	0.00	NA	0.00	0.00	NA	99.0%	NA
		Gas / Diesel Oil	$m^3 \times 10^3$		786.4	4,598.4	258.3	758.8	-4,829.10	36.38	NCV	-175,661.10	20.20	-3,548.35		-3,548.35	99.0%	-12,880.53
		Residual Fuel Oil	$m^3 \times 10^3$		3,989.7	2,412.5	740.9	-10.6	846.90	39.90	NCV	33,791.85	21.10	713.01	0.00	713.01	99.0%	2,588.22
		LPG	$m^3 \times 10^3$		18.1	99.6		-16.7	-64.80	24.01	NCV	-1,555.84	17.20	-26.76	604.29	-631.05	99.0%	-2,290.71
		Ethane	NA		0.0	0.0		0.0	0.00	17.90	NCV	0.00	NA	0.00	1,464.93	-1,464.93	99.0%	-5,317.70
		Naphtha	$m^3 \times 10^3$		6.9	123.2		1.8	-118.10	36.01	NCV	-4,252.54	20.00	-85.05	154.46	-239.51	99.0%	-869.42
		Bitumen	$m^3 \times 10^3$		439.7	122.8		-22.5	339.40	40.18	NCV	13,636.39	22.00	300.00	2,669.33	-2,369.33	99.0%	-8,600.68
		Lubricants	$m^3 \times 10^3$		113.2	67.5	0.0	8.1	37.60	37.73	NCV	1,418.81	20.00	28.38	352.89	-324.52	99.0%	-1,177.99
		Petroleum Coke	$m^3 \times 10^3$		801.5	12.8		-5.4	794.10	37.18	NCV	29,523.29	27.50	811.89	0.00	811.89	99.0%	2,947.16
		Refinery Feedstocks	$m^3 \times 10^3$		40.6	610.9		13.0	-583.30	22.95	NCV	-13,386.74	20.00	-267.73	1,398.08	-1,665.81	99.0%	-6,046.90
		Other Oil	$m^3 \times 10^3$		559.1	951.3		-89.0	-303.20	36.17	NCV	-10,967.05	20.00	-219.34	53.73	-273.07	99.0%	-991.26
Liquid Fossil Totals												3,408,800.72		67,807.37	6,697.72	61,109.65		221,890.81
Solid Fossil	Primary Fuels	Anthracite [2]	kt	0.0	493.9	0.0		0.0	493.90	27.55	NCV	13,606.95	26.80	364.67	0.00	364.67	98.0%	1,310.37
		Coking Coal	NA	0.0	0.0	0.0		0.0	0.00	28.78	NCV	0.00	0.00	0.00		0.00	98.0%	0.00
		Other Bit. Coal	kt	37,795.1	13,834.3	31,000.1	0.0	251.4	20,377.90	28.78	NCV	586,475.96	25.80	15,131.08	0.00	15,131.08	98.0%	54,371.01
		Sub-bit. Coal	kt	21,252.5	0.0	0.0	0.0	0.0	21,252.50	17.38	NCV	369,368.45	26.20	9,677.45	0.00	9,677.45	98.0%	34,774.32
		Lignite	kt	9,407.0	0.0	8.6		0.0	9,398.40	14.25	NCV	133,927.20	27.60	3,696.39	0.00	3,696.39	98.0%	13,282.36
		Oil Shale	NA	0.0	0.0	0.0		0.0	0.00	0.00	NCV	0.00	0.00	0.00	0.00	0.00	NA	NA
		Peat	NA	0.0	0.0	0.0		0.0	0.00	0.00	NCV	0.00	0.00	0.00	0.00	0.00	NA	NA
	Secondary Fuels	BKB & Patent Fuel	NA		0.0	0.0		0.0	0.00	0.00	NCV	0.00	0.00	0.00	0.00	0.00	NA	NA
		Coke Oven/Gas Coke	kt		338.6	193.1		0.0	145.50	27.39	NCV	3,985.25	29.50	117.56	0.00	117.56	98.0%	422.45
Solid Fuel Totals												1,107,363.80		28,987.15	0.00	28,987.15		104,160.51
Gaseous Fossil		Natural Gas (Dry)	Gl	110,447.6	641.1	40,688.7		1,615.6	68,784.40	34.00	NCV	2,338,807.17	15.30	35,783.75	715.00	35,068.75	99.5%	127,942.50
Total												**6,854,971.69**		**132,578.28**	**7,412.71**	**125,165.56**		**453,993.82**
Biomass total												802,384.44		21,227.89	0.00	21,227.89		77,835.59
		Solid Biomass	kt	29,069.6	0.0	0.0		0.0	29,069.58	18.00	NCV	523,252.44	29.90	15,645.25	0.00	15,645.25	100.0%	57,365.91
		Liquid Biomass	kt	19,938.0	0.0	0.0		0.0	19,938.00	14.00	NCV	279,132.00	20.00	5,582.64	0.00	5,582.64	100.0%	20,469.68
		Gas Biomass	NA	0.0	0.0	0.0		0.0	0.00	0.00	NCV	0.00	0.00	0.00	0.00	0.00	100.0%	NA

[1] To convert quantities expressed in natural units to energy units, use net calorific values (NCV). If gross calorific values (GCV) are used in this table, please indicate this by replacing "NCV" with "GCV" in this column.

[2] If Anthracite is not separately available, include with Other Bituminous Coal.

TABLE 1.A(c) COMPARISON OF CO_2 EMISSIONS FROM FUEL COMBUSTION
(Sheet 1 of 1)

Canada
1990
Submission 2000

FUEL TYPES	Reference approach		National approach [1]		Difference [2]	
	Energy consumption (PJ)	CO_2 emissions (Gg)	Energy consumption (PJ)	CO_2 emissions (Gg)	Energy consumption (%)	CO_2 emissions (%)
Liquid Fuels (excluding international bunkers)	3,408.80	221,890.81	3,115.44	210,535.34	9.42	5.39
Solid Fuels (excluding international bunkers)	1,107.36	104,160.51	1,099.89	86,362.97	0.68	20.61
Gaseous Fuels	2,338.81	127,942.50	2,763.97	116,672.74	-15.38	9.66
Other [3]			35.36	2,118.90	-100.00	-100.00
Total [3]	**6,854.97**	**453,993.82**	**7,014.66**	**415,689.94**	**-2.28**	**9.21**

[1] "National approach" is used to indicate the approach (if different from the Reference approach) followed by the Party to estimate its CO_2 emissions from fuel combustion reported in the national GHG inventory.

[2] Difference of the Reference approach over the National approach (i.e. difference = 100% x ((RA-NA)/NA), where NA = National approach and RA = Reference approach).

[3] Emissions from biomass are not included.

Note: In addition to estimating CO_2 emissions from fuel combustion by sector, Parties should also estimate these emissions using the IPCC Reference approach, as found in the IPCC Guidelines, Worksheet 1-1(Volume 2. Workbook). The Reference approach is to assist in verifying the sectoral data. Parties should also complete the above tables to compare the alternative estimates, and if the emission estimates lie more than 2 percent apart, should explain the source of this difference in the documentation box provided.

Documentation Box:

This comparison preprogrammed in the CRF is incorrect. Emissions resulting from the non energy use of fossil fuels in the industrial process sector are not included in the "National approach", therefore it grossly underestimates emissions when comparing to the Reference approach. The total for the national approach which includes industrial process fossil fuel CO_2 is 415689.94+24563.59=440253.53, which is a difference of 4.5%. See verification section of inventory document for explaination.

TABLE 1.A(d) SECTORAL BACKGROUND DATA FOR ENERGY
Feedstocks and Non-Energy Use of Fuels
(Sheet 1 of 1)

Canada
1990
Submission 2000

FUEL TYPE [1]	ACTIVITY DATA AND RELATED INFORMATION		IMPLIED EMISSION FACTOR	ESTIMATE	Additional information [a]	
	Fuel quantity (TJ)	Fraction of carbon stored	Carbon emission factor (t C/TJ)	of carbon stored in non-energy use of fuels (Gg C)	CO_2 not emitted (Gg CO_2)	Subtracted from energy sector *(specify source category)*
Naphtha [2]	9,653.74	0.80	20.00	154.46	566.35	
Lubricants	35,289.20	0.50	20.00	352.89	1,293.94	
Bitumen	121,333.37	1.00	22.00	2,669.33	9,787.56	
Coal Oils and Tars (from Coking Coal)	0.00	0.75	0.00	0.00	0.00	
Natural Gas[2]	141,611.53	0.33	15.30	715.00	2,621.65	
Gas/Diesel Oil [2]	0.00	0.50	0.00	0.00	0.00	
LPG [2]	24,830.96	0.80	17.20	341.67	1,252.80	
Butane [2]	19,085.41	0.80	17.20	262.62	962.92	
Ethane [2]	108,997.91	0.80	16.80	1,464.93	5,371.42	
Other *(please specify)*						
Other Products	12,793.68	0.21	20.00	53.73	197.02	
Refinery Feedstocks	87,379.83	0.80	20.00	1,398.08	5,126.28	
Total	560,975.64			7,412.71	27,179.95	

[1] Where fuels are used in different industries, please enter in different rows.
[2] Enter these fuels when they are used as feedstocks.

[a] The fuel lines continue from the table to the left.

Note: The table is consistent with the IPCC Guidelines. Parties that take into account the emissions associated with the use and disposal of these feedstocks could continue to use their methodology, and provide explanation notes in the documentation box below.

Documentation box: A fraction of energy carriers is stored in such products as plastics or asphalt. The non-stored fraction of the carbon in the energy carrier or product is oxidized, resulting in carbon dioxide emissions, either during the use of the energy carriers in the industrial production (e.g. fertilizer production), or during the use of the products (e.g. solvents, lubricants), or in both (e.g. monomers). To report associated emissions use the above table, filling an extra "Additional information" table, as shown below.

Associated CO_2 emissions (Gg)	Allocated under *(Specify source category)* [a]

[a] e.g. Industrial Processes, Waste Incineration, etc.

TABLE 1.B.1 SECTORAL BACKGROUND DATA FOR ENERGY Canada

Fugitive Emissions from Solid Fuels 1990

(Sheet 1 of 1) Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA	IMPLIED EMISSION FACTOR		EMISSIONS	
	Amount of fuel produced [1] (Mt)	CH_4 (kg/t)	CO_2 (kg/t)	CH_4 (Gg)	CO_2 (Gg)
1. B. 1. a. Coal Mining and Handling	89.46			91.16	0.00
i. Underground Mines[2]	4.95	11.61	0.00	57.50	0.00
Mining Activities		11.61	#VALUE!	57.50	NE
Post-Mining Activities		#VALUE!	#VALUE!	IE	NE
ii. Surface Mines[2]	84.51	0.40	0.00	33.67	0.00
Mining Activities		0.40	#VALUE!	33.67	NE
Post-Mining Activities		#VALUE!	#VALUE!	IE	NE
1. B. 1. b. Solid Fuel Transformation	NI	0.00	0.00	NI	NI
1. B. 1. c. Other *(please specify)* [3]				0.00	0.00
	NI	0.00	0.00	NI	NI

Additional information [a]

Description	Value
Amount of CH_4 drained (recovered) and utilized or flared (Gg)	NA
Number of active underground mines	NA
Number of mines with drainage (recovery) systems	NA

[a] For underground mines.

[1] Use the documentation box to specify whether the fuel amount is based on the run-of-mine (ROM) production or on the saleable production.

[2] Emissions both for Mining Activities and Post-Mining Activities are calculated with the activity data in lines Underground Mines and Surface Mines respectively.

[3] Please click on the button to enter any other solid fuel related activities resulting in fugitive emissions, such as emissions from abandoned mines and waste piles.

Note: There are no clear references to the coverage of 1.B.1.b. and 1.B.1.c. in the IPCC Guidelines. Make sure that the emissions entered here are not reported elsewhere. If they are reported under another source category, indicate this (IE) and make a reference in Table 9 (completeness) and/or in the documentation box.

Documentation box:

[1] Refer to National Inventory Report for detailed methodologies and activity data.

[2] **ONLY Implied Emission Factors** were caluclated using Underground Mines and Surface Mines activity data, **NOT CH_4 and CO_2 emissions**

TABLE 1.B.2 SECTORAL BACKGROUND DATA FOR ENERGY Canada
Fugitive Emissions from Oil and Natural Gas 1990
(Sheet 1 of 1) Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA			IMPLIED EMISSION FACTORS			EMISSIONS		
	Description [1]	Unit	Value	CO_2 *(kg/unit)* [2]	CH_4 *(kg/unit)* [2]	N_2O *(kg/unit)* [2]	CO_2 (Gg)	CH_4 (Gg)	N_2O (Gg)
1. B. 2. a. Oil [3]							**26.89**	**406.82**	
i. Exploration	*IE*	IE	IE	0.00	0.00		IE	IE	
ii. Production [4]	*Conventional, heavy Oil and Cude Bitumen Pr*	10^3 m^3	77,905.00	343.73	5,202.69		26.78	405.32	
iii. Transport	*Liquid Product Transport*	NA	NA	0.00	0.00		0.11	1.51	
iv. Refining / Storage	*NE*	NE	NE	0.00	0.00		NE	NE	
v. Distribution of oil products	*NE*	NE	NE	0.00	0.00		NE	NE	
vi. Other				0.00	0.00				
1. B. 2. b. Natural Gas							**18.71**	**816.28**	
Exploration	*NA*	NA	NA	0.00	0.00		0.06	5.63	
i. Production [4] / Processing	*Gross production and net withdrawals of natur*	10^6 m^3	261,858.00	65.42	1,813.84		17.13	474.97	
ii. Transmission	*Pipeline distance*	km	64,222.00	23.78	3,187.13		1.53	204.68	
Distribution	*Pipeline Distribution Length - Leakage*	km	168,813.00	#VALUE!	776.01		NA	131.00	
iii. Other Leakage	*NA*	NA	NA	0.00	0.00		NA	NA	
at industrial plants and power stations				0.00	0.00				
in residential and commercial sectors				0.00	0.00				
1. B. 2. c. Venting [5]							**4,499.30**	**0.00**	
i. Oil	*NA*	NA	NA	0.00	0.00		NA	NA	
ii. Gas	*Withdrawls of Natural Gas*	10^6 m^3	123,228.00	36,511.99	#VALUE!		4,499.30	NA	
iii. Combined	*NA*	NA	NA	0.00	0.00		NA	NA	
Flaring							**5,287.75**	**23.61**	**0.00**
i. Oil	*NA*	NA	NA	0.00	0.00	0.00	NA	NA	NA
ii. Gas	*NA*	NA	NA	0.00	0.00	0.00	NA	NA	NA
iii. Combined	*Natural Gas & Oil Production*	10^6 m^3	138,630.00	38,142.90	170.34	#VALUE!	5,287.75	23.61	NA
1.B.2.d. Other *(please specify)* [6]							**0.00**	**0.00**	**0.00**
				0.00	0.00	0.00			

Additional information

Description	Value	Unit
Pipelines length (km)	NA	NA
Number of oil wells	NA	NA
Number of gas wells	NA	NA
Gas throughput [a]	NA	NA
Oil throughput [a]	NA	NA
Other relevant information *(specify)*	NA	NA

[a] In the context of oil and gas production, throughput is a measure of the total production, such as barrels per day of oil, or cubic meters of gas per year. Specify the units of the reported value in the unit column. Take into account that these values should be consistent with the activity data reported under the production rows of the main table.

[1] Specify the activity data used and fill in the activity data description column, as given in the examples in brackets. Specify the unit of the activity data in the unit column. Use the document box to specify whether the fuel amount is based on the raw material production or on the saleable production. Note cases where more than one variable is used as activity data.

[2] The unit of the implied emission factor will depend on the units of the activity data used, and is therefore not specified in this column. The unit of the implied emission factor for each activity will be kg/unit of activity data.

[3] Use the category also to cover emissions from combined oil and gas production fields. Natural gas processing and distribution from these fields should be included under 1.B.2.b.ii and 1.B.2.b.iii, respectively.

[4] If using default emission factors these categories will include emissions from production other than venting and flaring.

[5] If using default emission factors, emissions from Venting and Flaring from all oil and gas production should be accounted for here. Parties using the IPCC software could report those emissions together, indicating so in the documentation box.

[6] For example, fugitive CO_2 emissions from production of geothermal power could be reported here.

Documentation box:

[1] Refer to National Inventory Report for detailed methodologies and activity data.

TABLE 1.C SECTORAL BACKGROUND DATA FOR ENERGY
International Bunkers and Multilateral Operations
(Sheet 1 of 1)

Canada
1990
Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA	IMPLIED EMISSION FACTORS			EMISSIONS		
	Consumption (TJ)	CO_2 (t/TJ)	CH_4 (kg/TJ)	N_2O (kg/TJ)	CO_2 (Gg)	CH_4 (Gg)	N_2O (Gg)
Marine Bunkers	**40,908.80**				**2,994.54**	**0.07**	**0.44**
Gasoline	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Gas/Diesel Oil	9,991.04	70.58	6.72	10.34	705.16	0.07	0.10
Residual Fuel Oil	30,917.76	74.05	0.00	10.78	2,289.38	0.00	0.33
Lubricants		0.00	0.00	0.00	NO	NO	NO
Coal		0.00	0.00	0.00	NO	NO	NO
Other *(please specify)*	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00			
Aviation Bunkers	**38,923.17**				**2,729.01**	**0.08**	**0.27**
Jet Kerosene	38,923.17	70.11	2.09	6.87	2,729.01	0.08	0.27
Gasoline	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Multilateral Operations [1]							

Additional information

Fuel consumption	Allocation [a] (percent)	
	Domestic	International
Marine	61.60	38.40
Aviation	79.19	20.81

[a] For calculating the allocation of fuel consumption, use the sums of fuel consumption by domestic navigation and aviation (Table 1.A(a)) and by international bunkers (Table 1.C).

[1] Parties may choose to report or not report the activity data and emission factors for multilateral operation consistent with the principle of confidentiality stated in the UNFCCC reporting guidelines on inventories. In any case, Parties should report the emissions from multilateral operations, where available, under the Memo Items section of the Summary tables and in the Sectoral report table for energy.

Note: In accordance with the IPCC Guidelines, international aviation and marine bunker fuel emissions from fuel sold to ships or aircraft engaged in international transport should be excluded from national totals and reported separately for informational purposes only.

Documentation box: Please explain how the consumption of international marine and aviation bunkers fuels was estimated and separated from the domestic consumption.

TABLE 2(I) SECTORAL REPORT FOR INDUSTRIAL PROCESSES
(Sheet 1 of 2)

Canada
1990
Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO_2	CH_4	N_2O	$HFCs^{(1)}$		$PFCs^{(1)}$		SF_6		NO_x	CO	NMVOC	SO_2
				P	A	P	A	P	A				
	(Gg)			CO_2 equivalent (Gg)				(Gg)					
Total Industrial Processes	**32,724.27**	**0.00**	**37.08**	**0.00**	**0.00**	**0.00**	**5,975.11**	**0.00**	**0.12**	**0.00**	**0.00**	**0.00**	**0.00**
A. Mineral Products	**8,160.68**	**0.00**	**0.00**							**0.00**	**0.00**	**0.00**	**0.00**
1. Cement Production	5,872.50												NE
2. Lime Production	1,849.18												
3. Limestone and Dolomite Use	371.00												
4. Soda Ash Production and Use	68.00												
5. Asphalt Roofing	NE										NE	NE	
6. Road Paving with Asphalt	NE									NE	NE	NE	NE
7. Other *(please specify)*	0.00	0.00	0.00							0.00	0.00	0.00	0.00
B. Chemical Industry	**3,126.54**	**0.00**	**37.08**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
1. Ammonia Production	3,126.54	NE								NE	NE	NE	NE
2. Nitric Acid Production			2.51							NE			
3. Adipic Acid Production			34.58							NE	NE	NE	
4. Carbide Production	0.00	0.00									NE	NE	NE
5. Other *(please specify)*	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C. Metal Production	**10,221.52**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**5,975.11**	**0.00**	**0.12**	**0.00**	**0.00**	**0.00**	**0.00**
1. Iron and Steel Production	7,585.33	0.00								NE	NE	NE	NE
2. Ferroalloys Production	IE	NE								NE	NE	NE	NE
3. Aluminium Production	2,636.19	NE					5,975.11			NE	NE	NE	NE
4. SF_6 Used in Aluminium and Magnesium Foundries									0.12				
5. Other *(please specify)*	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

P = Potential emissions based on Tier 1 approach of the IPCC Guidelines. A = Actual emissions based on Tier 2 approach of the IPCC Guidelines. This only applies in sectors where methods exist for both tiers.

(1) The emissions of HFCs and PFCs are to be expressed as CO_2 equivalent emissions. Data on disaggregated emissions of HFCs and PFCs are to be provided in Table 2(II) of this common reporting format.

TABLE 2(I) SECTORAL REPORT FOR INDUSTRIAL PROCESSES
(Sheet 2 of 2)

Canada
1990
Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO_2	CH_4	N_2O	$HFCs^{(1)}$		$PFCs^{(1)}$		SF_6		NO_x	CO	NMVOC	SO_2
				P	A	P	A	P	A				
	(Gg)			CO_2 equivalent (Gg)				(Gg)					
D. Other Production	**IE**									**0.00**	**0.00**	**0.00**	**0.00**
1. Pulp and Paper										NE	NE	NE	NE
2. Food and Drink[2]	IE											NE	
E. Production of Halocarbons and SF_6					**0.00**		**0.00**		**0.00**				
1. By-product Emissions					0.00		0.00		0.00				
Production of HCFC-22					0.00								
Other					0.00		0.00		0.00				
2. Fugitive Emissions					0.00		0.00		0.00				
3. Other *(please specify)*					0.00		0.00		0.00				
F. Consumption of Halocarbons and SF_6				**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**				
1. Refrigeration and Air Conditioning Equipment				0.00	0.00	0.00	0.00	0.00	0.00				
2. Foam Blowing				0.00	0.00	0.00	0.00	0.00	0.00				
3. Fire Extinguishers				0.00	0.00	0.00	0.00	0.00	0.00				
4. Aerosols/ Metered Dose Inhalers				0.00	0.00	0.00	0.00	0.00	0.00				
5. Solvents				0.00	0.00	0.00	0.00	0.00	0.00				
6. Semiconductor Manufacture				0.00	0.00	0.00	0.00	0.00	0.00				
7. Electrical Equipment				0.00	0.00	0.00	0.00	0.00	0.00				
8. Other *(please specify)*				0.00	0.00	0.00	0.00	0.00	0.00				
G. Other *(please specify)*	**11,215.53**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

[2] CO_2 from Food and Drink Production (e.g. gasification of water) can be of biogenic or non-biogenic origin. Only information on CO_2 emissions of non-biogenic origin should be reported.

TABLE 2(I).A-G SECTORAL BACKGROUND DATA FOR INDUSTRIAL PROCESSES Canada

Emissions of CO_2, CH_4 and N_2O 1990

(Sheet 1 of 2) Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA		IMPLIED EMISSION FACTORS			EMISSIONS[2]					
	Production/Consumption quantity		CO_2	CH_4	N_2O	CO_2		CH_4		N_2O	
	Description [1]	(kt)	(t/t)	(t/t)	(t/t)	(Gg)	[2]	(Gg)	[2]	(Gg)	[2]
A. Mineral Products						**8,160.68**		**0.00**		**0.00**	
1. Cement Production	*Cement Production Data*	11,745.00	0.50			5,872.50					
2. Lime Production	Lime Production Data	2,340.74	0.79			1,849.18					
3. Limestone and Dolomite Use	Limestone Production Data	752.00	0.49			371.00					
4. Soda Ash						68.00					
Soda Ash Production	NO	NO	0.00			NO					
Soda Ash Use	Soda Use in Glass Industries - Soda	165.00	0.41			68.00					
5. Asphalt Roofing	NE	NE	0.00			NE					
6. Road Paving with Asphalt	NE	NE	0.00			NE					
7. Other *(please specify)*						0.00		0.00		0.00	
Glass Production			0.00								
			0.00	0.00	0.00						
B. Chemical Industry						**3,126.54**		**0.00**		**37.08**	
1. Ammonia Production [3]	Anhydrous Ammonia Production Dat	3,709.94	0.84	#VALUE!	#VALUE!	3,126.54	1,880.97	NE		NE	
2. Nitric Acid Production	Nitric Acid Production	965.10			0.00					2.51	
3. Adipic Acid Production	Point Source Nitrous Oxide Data	NA			0.00					34.58	
4. Carbide Production			0.00	0.00		0.00		0.00			
Silicon Carbide			0.00	0.00		IE		NE			
Calcium Carbide			0.00	0.00		IE		NE			
5. Other *(please specify)*						0.00		0.00		0.00	
Carbon Black				0.00				NE			
Ethylene			0.00	0.00	0.00	IE		NE		NE	
Dichloroethylene				0.00				NE			
Styrene				0.00				NE			
Methanol				0.00				NE			
			0.00	0.00	0.00						

[1] Where the IPCC Guidelines provide options for activity data, e.g. cement or clinker for estimating the emissions from Cement Production, specify the activity data used (as shown in the example in brackets) in order to make the choice of emission factor more transparent and to facilitate comparisons of implied emission factors.

[2] Enter cases in which the final emissions are reduced with the quantities of emission recovery, oxidation, destruction, transformation. Adjusted emissions are reported and the quantitative information on recovery, oxidation, destruction, and transformation should be given in the additional columns provided.

[3] To avoid double counting make offsetting deductions from fuel consumption (e.g. natural gas) in Ammonia Production, first for feedstock use of the fuel, and then to a sequestering use of the feedstock.

TABLE 2(I).A-G SECTORAL BACKGROUND DATA FOR INDUSTRIAL PROCESSES

Canada

Emissions of CO_2, CH_4 and N_2O

1990

(Sheet 2 of 2)

Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA		IMPLIED EMISSION FACTORS			EMISSIONS[2]					
	Production/Consumption Quantity		CO_2	CH_4	N_2O	CO_2		CH_4		N_2O	
	Description [1]	(kt)	(t/t)	(t/t)	(t/t)	(Gg)	[2]	(Gg)	[2]	(Gg)	[2]
C. Metal Production [4]						**10,221.52**		**0.00**		**0.00**	
1. Iron and Steel Production	NA	NA	0.00			7,585.33		0.00			
Steel	NA	NA	0.00			NA					
Pig Iron	NA	NA	0.00	0.00		NA		NA			
Sinter	NA	NA	0.00	0.00		NA		NA			
Coke	Secondary Coke Consumptior	3,353.00	2.26	#VALUE!		7,585.33		NE			
Other *(please specify)*						0.00		0.00			
			0.00	0.00	0.00						
2. Ferroalloys Production	NA	NA	0.00	0.00		IE		NE			
3. Aluminium Production	Alluminum production	1,567.00	1.68	#VALUE!		2,636.19		NE			
4. SF_6 Used in Aluminium and Magnesium Foundries											
5. Other *(please specify)*						0.00		0.00		0.00	
			0.00	0.00	0.00						
D. Other Production						**0.00**					
1. Pulp and Paper											
2. Food and Drink			0.00			IE					
G. Other *(please specify)*						**11,215.53**		**0.00**		**0.00**	
Other & Undifferentiated Production	Non Energy Use of Primary a	NA	0.00	0.00	0.00	11,215.53		NE		NE	

[4] More specific information (e.g. data on virgin and recycled steel production) could be provided in the documentation box.

Note: In case of confidentiality of the activity data information, the entries should provide aggregate figures but there should be a note in the documentation box indicating this.

Documentation box:

Table 2(I).A-G Sectorial Background Data for Industrial Processes

B. Chemical Industry - 1. Ammonia Production: [2] Quantity reduced due to trap urea

TABLE 2(II) SECTORAL REPORT FOR INDUSTRIAL PROCESSES - EMISSIONS OF HFCs, PFCs AND SF_6
(Sheet 1 of 2)

Canada
1990
Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	HFC-23	HFC-32	HFC-41	HFC-43-10mee	HFC-125	HFC-134	HFC-134a	HFC-152a	HFC-143	HFC-143a	HFC-227ea	HFC-236fa	HFC-245ca	Total HFCs[1]	CF_4	C_2F_6	C_3F_8	C_4F_{10}	$c\text{-}C_4F_8$	C_5F_{12}	C_6F_{14}	Total PFCs[1]	SF_6
	(t)[2]																						
Total Actual Emissions of Halocarbons (by chemical) and SF_6	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		**813.90**	**74.43**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		**120.10**
C. Metal Production															**813.90**	**74.43**	NA	NA	NA	NA	NA		**120.10**
Aluminium Production															813.90	74.43	NA	NA	NA	NA	NA		
SF_6 Used in Aluminium Foundries																							NE
SF_6 Used in Magnesium Foundries																							120.10
E. Production of Halocarbons and SF_6	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**
1. By-product Emissions	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
Production of HCFC-22	NO																						
Other	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA		NA
2. Fugitive Emissions	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA		NA
3. Other *(please specify)*	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
F(a). Consumption of Halocarbons and SF_6 (actual emissions - Tier 2)	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**
1. Refrigeration and Air Conditioning Equipment	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO		NE	NE	NE	NE	NE	NE	NE		NA
2. Foam Blowing	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO		NE	NE	NE	NE	NE	NE	NE		NA
3. Fire Extinguishers	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO		NE	NE	NE	NE	NE	NE	NE		0.00
4. Aerosols/Metered Dose Inhalers	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO		NE	NE	NE	NE	NE	NE	NE		0.00
5. Solvents	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO		NE	NE	NE	NE	NE	NE	NE		0.00
6. Semiconductor Manufacture	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO		NE	NE	NE	NE	NE	NE	NE		NE
7. Electrical Equipment																							NE
8. Other *(please specify)*	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
G. Other *(please specify)*	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**

[1] Although shaded, the columns with HFCs and PFCs totals on sheet 1 are kept for consistency with sheet 2 of the table.

[2] Note that the units used in this table differ from those used in the rest of the Sectoral report tables, i.e. [t] instead of [Gg].

Note: Where information is confidential the entries should provide aggregate figures but there should be a note indicating this in the relevant documentation boxes of the Sectoral background data tables or as a comment to the corresponding cell.
Gases with GWP not yet agreed upon by the COP, should be reported in Table 9 (Completeness), sheet 2.

TABLE 2(II) SECTORAL REPORT FOR INDUSTRIAL PROCESSES - EMISSIONS OF HFCs, PFCs AND SF_6
(Sheet 2 of 2)

Canada
1990
Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	HFC-23	HFC-32	HFC-41	HFC-43-10mee	HFC-125	HFC-134	HFC-134a	HFC-152a	HFC-143	HFC-143a	HFC-227ea	HFC-236fa	HFC-245ca	Total HFCs	CF_4	C_2F_6	C_3F_8	C_4F_{10}	c-C_4F_8	C_5F_{12}	C_6F_{14}	Total PFCs	SF_6
	(t)[2]																						
F(p). Total Potential Emissions of Halocarbons (by chemical) and SF_6 [3]	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**
Production[4]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
Import:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
In bulk	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO		NE	NE	NE	NE	NE	NE	NE		NE
In products [5]	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO		NE	NE	NE	NE	NE	NE	NE		NE
Export:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
In bulk	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO		NE	NE	NE	NE	NE	NE	NE		0.00
In products [5]	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO		NE	NE	NE	NE	NE	NE	NE		0.00
Destroyed amount	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO		NE	NE	NE	NE	NE	NE	NE		0.00

GWP values used	**11700**	**650**	**150**	**1300**	**2800**	**1000**	**1300**	**140**	**300**	**3800**	**2900**	**6300**	**560**		**6500**	**9200**	**7000**	**7000**	**8700**	**7500**	**7400**		**23900**
Total Actual Emissions [6] (Gg CO_2 eq.)	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**5,290.35**	**684.76**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**5,975.11**	**2,870.39**
C. Metal Production															5,290.35	684.76	NA	NA	NA	NA	NA	5,975.11	2,870.39
E. Production of Halocarbons and SF_6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
F(a). Consumption of Halocarbons and SF_6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
G. Other	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Ratio of Potential/Actual Emissions from Consumption of Halocarbons and SF_6																							
Actual emissions - F(a) (Gg CO_2 eq.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Potential emissions - F(p) (7) (Gg CO_2 eq.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Potential/Actual emissions ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

[3] Potential emissions of each chemical of halocarbons and SF6 estimated using Tier 1a or Tier 1b of the IPCC Guidelines (Volume 3. Reference Manual, pp. 2.47-2.50). When potential emissions estimates are available in a disaggregated manner corresponding to the subsectors for actual emissions defined on sheet 1 of this table, these should be reported in an annex to sheet 2, using the format of sheet 1, sector F(a). Use Summary 3 of this common reporting format to indicate whether Tier 1a or Tier 1b was used.

[4] Production refers to production of new chemicals. Recycled substances could be included here, but it should be ensured that double counting of emissions is avoided. Relevant explanations should be provided as a comment to the corresponding cell.

[5] Relevant just for Tier 1b.

[6] Sums of the actual emissions of each chemical of halocarbons and SF6 from the source categories given in sheet 1 of the table multiplied by the corresponding GWP values.

[7] Potential emissions of each chemical of halocarbons and SF6 taken from row F(p) multiplied by the corresponding GWP values.

Note: As stated in the revised UNFCCC guidelines, Parties should report actual emissions of HFCs, PFCs and SF_6, where data are available, providing disaggregated data by chemical and source category in units of mass and in CO_2 equivalents. Parties reporting actual emissions should also report potential emissions for the sources where the concept of potential emissions applies, for reasons of transparency and comparability.

TABLE 2(II). C, E SECTORAL BACKGROUND DATA FOR INDUSTRIAL PROCESSES
Metal Production; Production of Halocarbons and SF_6
(Sheet 1 of 1)

Canada
1990
Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA		IMPLIED EMISSION FACTORS[2]	EMISSIONS[2]	
	Description [1]	(t)	(kg/t)	(t)	[3]
C. PFCs and SF_6 from Metal Production					
PFCs from Aluminium Production					
CF_4	Alluminum Production Data	1,567,000.00	0.52	813.90	NA
C_2F_6	Alluminum Production Data	1,567,000.00	0.05	74.43	NA
SF_6				120.10	NA
Aluminium Foundries	*NA*	NA	0.00	NA	NA
Magnesium Foundries	Point Source SF6 Data from Magnesium Foundries	NA	0.00	120.10	NA
E. Production of Halocarbons and SF_6					
1. By-product Emissions					
Production of HCFC-22					
HFC-23	NO	NO	0.00	NO	NO
Other *(specify chemical)*					
			0.00		
2. Fugitive Emissions					
HFCs *(specify chemical)*					
			0.00		
PFCs *(specify chemical)*					
			0.00		
SF_6			0.00		
3. Other *(please specify)*					
			0.00		

[1] Specify the activity data used as shown in the examples within brackets. Where applying Tier 1b (for C), Tier 2 (for E) and country specific methods, specify any other relevant activity data used in the documentation box below.

[2] Emissions and implied emission factors are after recovery.

[3] Enter cases in which the final emissions are reported after subtracting the quantities of emission recovery, oxidation, destruction, transformation. Enter these quantities in the specified column and use the documentation box for further explanations.

Note: Where the activity data are confidential, the entries should provide aggregate figures, but there should be a note in the documentation box indicating this.

Documentation box:

Table 2(II) Sectoral Report for Industrial Processes - Emissions of HFCs, PFCs, and SF_6.

Consumption of HFCs were estimated for 1995 to 1998, assumed that there were no HFCs used prior to 1995.
Refer to the National Inventory Report for HFCs emission estimate methodology. HFC consumption data for 1998 are not yet available, therefore assumed constant 1997 HFC consumption.

Table 2(II). C,E Setoral Background Data for Industrial Porcesses

[1] Refer to the National Inventory Report for specific methods, assumptions, and relevant sources of activity data.

[2] Emissions were not recovered, but were estimated based on production and technology type.

TABLE 2(II).F SECTORAL BACKGROUND DATA FOR INDUSTRIAL PROCESSES Canada

Consumption of Halocarbons and SF_6 1990

(Sheet 1 of 2) Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA *Amount of fluid*			IMPLIED EMISSION FACTORS			EMISSIONS		
	Filled in new manufactured products	In operating systems (average annual stocks)	Remained in products at decommissioning [1]	Product manufacturing factor	Product life factor	Disposal loss factor	From manufacturing	From stocks	From disposal
	(t)			(% per annum)			(t)		
1 Refrigeration									
Air Conditioning Equipment									
Domestic Refrigeration *(Specify chemical)* [2]									
(e.g. HFC-32)	NA	NA	NA	NA	NA	NA	NA	NA	NA
(e.g. HFC-125)	NA	NA	NA	NA	NA	NA	NA	NA	NA
(e.g. HFC-134a)	NA	NA	NA	NA	NA	NA	NA	NA	NA
(e.g. HFC-152a)	NA	NA	NA	NA	NA	NA	NA	NA	NA
(e.g. HFC-143a)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Commercial Refrigeration									
Transport Refrigeration									
Industrial Refrigeration									
Stationary Air-Conditioning									
Mobile Air-Conditioning									
2 Foam Blowing									
Hard Foam									
Soft Foam									

[1] Parties should use the documentation box to provide information on the amount of the chemical recovered (recovery efficiency) and other relavant information used in the emission estimation.

[2] Please click on the button to specify the chemical consumed, as given in the example. If needed, new rows could be added for reporting the disagregated chemicals from a source by clicking on the corresponding button.

Note: Table 2.(II).F provides for reporting of the activity data and emission factors used to calculate actual emissions from consumption of halocarbons and SF6 using the "bottom-up approach" (based on the total stock of equipment and estimated emission rates from this equipment). Some Parties may prefer to estimate their actual emissions following the alternative "top-down approach" (based on annual sales of equipment and/or gas). These Parties should provide the activity data used in the current format and any other relevant information in the documentation box at the end of Table2(II)Fs2. Data these Parties should provide includes (1) the amount of fluid used to fill new products, (2) the amount of fluid used to service existing products, (3) the amount of fluid originally used to fill retiring products (the total nameplate capacity of retiring products), (4) the product lifetime, and (5) the growth rate of product sales, if this has been used to calculate the amount of fluid originally used to fill retiring products. Alternatively, Parties may provide alternative formats with equivalent information. These formats may be considered for future versions of the common reporting format after the trial period.

TABLE 2(II).F SECTORAL BACKGROUND DATA FOR INDUSTRIAL PROCESSES Canada

Consumption of Halocarbons and SF_6 1990

(Sheet 2 of 2) Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA *Amount of fluid*			IMPLIED EMISSION FACTORS			EMISSIONS		
	Filled in new manufactured products	In operating systems (average annual stocks)	Remained in products at decommissioning [1]	Product manufacturing factor	Product life factor	Disposal loss factor	From manufacturing	From stocks	From disposal
	(t)			(% per annum)			(t)		
3 Fire Extinguishers									
4 Aerosols									
Metered Dose Inhalers									
Other									
5 Solvents									
6 Semiconductors									
7 Electric Equipment									
8 Other *(please specify)*									

Note: Where the activity data are confidential, the entries should provide aggregate figures, but there should be a note indicating this and explanations in the documentation box.

Documentation box:

Table 2(II).F Sectoral Background Data for Industrial Processes - Consumption of Halocarbons and SF6

Refer to National Inventory Report for HFC methodologies and activity data sources for 1995 to 1998.

TABLE 3 SECTORAL REPORT FOR SOLVENT AND OTHER PRODUCT USE
(Sheet 1 of 1)

Canada
1990
Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO_2	N_2O	NMVOC
	(Gg)		
Total Solvent and Other Product Use	**0.00**	**1.35**	**0.00**
A. Paint Application	**NA**	**NA**	**NE**
B. Degreasing and Dry Cleaning	**NA**	**NA**	**NE**
C. Chemical Products, Manufacture and Processing			**NE**
D. Other *(please specify)*	0.00	1.35	0.00
Use of N2O for Anaesthesia	NA	1.28	**NE**
Propellant Usage	NA	0.07	**NE**

Please account for the quantity of carbon released in the form of NMVOC in both the NMVOC and the CO_2 columns.

Note: The IPCC Guidelines do not provide methodologies for the calculation of emissions of N_2O from Solvent and Other Product Use. If reporting such data, Parties should provide additional information (activity data and emission factors) used to make these estimates in the documentation box to Table 3.A-D.

TABLE 3.A-D SECTORAL BACKGROUND DATA FOR SOLVENT AND OTHER PRODUCT USE
(Sheet 1 of 1)

Canada
1990
Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA		IMPLIED EMISSION FACTORS	
	Description	(kt)	CO_2 (t/t)	N_2O (t/t)
A. Paint Application			**0.00**	**0.00**
B. Degreasing and Dry Cleaning			**0.00**	**0.00**
C. Chemical Products, Manufacture and Processing				
D. Other *(please specify)* [1]				
Use of N2O for Anaesthesia	Population Data	27,790,600.00	#VALUE!	0.00
Propellant Usage	Population Data	27,790,600.00	#VALUE!	0.00
			0.00	0.00
			0.00	0.00

[1] Some probable sources are provided in brackets. Complement the list with other relevant sources. Make sure that the order is the same as in Table 3.

Note: The table follows the format of the IPCC Sectoral Report for Solvent and Other Product Use, although some of the source categories are not relevant to the direct GHG emissions.

Documentation box:
D. Other - Use of N_2O for Anaesthesia and Propellant - used population activitiy data

TABLE 4 SECTORAL REPORT FOR AGRICULTURE
(Sheet 1 of 2)

Canada
1990
Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CH_4	N_2O	NO_x	CO	NMVOC
	(Gg)				
Total Agriculture	**980.44**	**129.69**	**0.00**	**0.00**	**0.00**
A. Enteric Fermentation	**761.62**				
1. Cattle	734.09				
Dairy Cattle	196.42				
Non-Dairy Cattle	537.68				
2. Buffalo	NE				
3. Sheep	5.71				
4. Goats	0.10				
5. Camels and Llamas	NO				
6. Horses	6.41				
7. Mules and Asses	0.00				
8. Swine	15.32				
9. Poultry	0.00				
10. Other *(please specify)*					
B. Manure Management	**218.82**	**13.69**			**0.00**
1. Cattle	81.56				
Dairy Cattle	71.66				
Non-Dairy Cattle	9.90				
2. Buffalo	NE				
3. Sheep	0.14				
4. Goats	0.00				
5. Camels and Llamas	NO				
6. Horses	0.00				
7. Mules and Asses	0.00				
8. Swine	102.11				
9. Poultry	35.01				

TABLE 4 SECTORAL REPORT FOR AGRICULTURE
(Sheet 2 of 2)

Canada
1990
Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CH_4	N_2O	NO_x	CO	NMVOC
	(Gg)				
B. Manure Management (continued)					
10. Anaerobic Lagoons		0.00			NE
11. Liquid Systems		0.35			NE
12. Solid Storage and Dry Lot		11.77			NE
13. Other *(please specify)*		1.56			0.00
Other Systems		1.56			NE
C. Rice Cultivation	0.00				**0.00**
1. Irrigated	0.00				NE
2. Rainfed	0.00				NE
3. Deep Water	0.00				NE
4. Other *(please specify)*	0.00				0.00
D. Agricultural Soils [(1)]	**0.00**	**116.00**			**0.00**
1. Direct Soil Emissions	NA	75.43			NE
2. Animal Production	NA	8.58			NE
3. Indirect Emissions	NA	31.99			NE
4. Other *(please specify)*	0.00	0.00			0.00
E. Prescribed Burning of Savannas	**0.00**	**0.00**	**NE**	**NE**	**NE**
F. Field Burning of Agricultural Residues	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
1 . Cereals	0.00	0.00	NE	NE	NE
2. Pulse	0.00	0.00	NE	NE	NE
3 . Tuber and Root	0.00	0.00	NE	NE	NE
4 . Sugar Cane	NO	NO	NE	NE	NE
5 . Other *(please specify)*	0.00	0.00	0.00	0.00	0.00
G. Other *(please specify)*	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

[(1)] See footnote 4 to Summary 1.A of this common reporting format. Parties which choose to report CO_2 emissions and removals from agricultural soils under 4.D. Agricultural Soils category of the sector Agriculture should indicate the amount [Gg] of these emissions or removals in the documentation box to Table 4.D. Additional information (activity data, implied emissions factors) should also be provided using the relevant documentation box to Table 4.D. This table is not modified for reporting the CO_2 emissions and removals for the sake of consistency with the IPCC tables (i.e. IPCC Sectoral Report for Agriculture).

Note: The IPCC Guidelines do not provide methodologies for the calculation of CH_4 emissions, CH_4 and N_2O removals from agricultural soils, or CO_2 emissions from savanna burning or agricultural residues burning. If you have reported such data, you should provide additional information (activity data and emission factors) used to make these estimates using the relevant documentation boxes of the Sectoral background data tables.

TABLE 4.A SECTORAL BACKGROUND DATA FOR AGRICULTURE
Enteric Fermentation
(Sheet 1 of 1)

Canada
1990
Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA[1] AND OTHER RELATED INFORMATION			IMPLIED EMISSION FACTORS
	Population size[2] (1000 head)	Average daily feed intake (MJ/day)	CH_4 conversion (%)	CH_4 (kg CH_4/head/yr)
1. Cattle	11,890	NA	NA	61.74
Dairy Cattle[3]	1,991	NA	NA	98.68
Non-Dairy Cattle	9,900	NA	NA	54.31
2. Buffalo	NE	NA	NA	0.00
3. Sheep	412	NA	NA	13.87
4. Goats	19	NA	NA	5.00
5. Camels and Llamas	NO	NA	NA	0.00
6. Horses	356	NA	NA	18.00
7. Mules and Asses	0	NA	NA	0.00
8. Swine	10,211	NA	NA	1.50
9. Poultry	448,863	NA	NA	0.00
10. Other *(please specify)*				
				0.00

Additional information (for Tier 2)[a]

Disaggregated list of animals[b] Indicators:		Dairy Cattle	Non-Dairy Cattle	Other *(specify)*	
Weight	(kg)	NA	NA	NA	NA
Feeding situation[c]		NA	NA	NA	NA
Milk yield	(kg/day)	NA	NA	NA	NA
Work	(hrs/day)	NA	NA	NA	NA
Pregnant	(%)	NA	NA	NA	NA
Digestibility of feed	(%)	NA	NA	NA	NA

[a] Compare to Tables A-1 and A-2 of the IPCC Guidelines (Volume 3. Reference Manual, pp. 4.31-4.34). These data are relevant if Parties do not have data on average feed intake.

[b] Disaggregate to the split actually used. Add columns to the table if necessary.

[c] Specify feeding situation as pasture, stall fed, confined, open range, etc.

[1] In the documentation boxes to all Sectoral background data tables for Agriculture, Parties should provide information on whether the activity data is one year or a 3-year average.

[2] Parties are encouraged to provide detailed livestock population data by animal type and region in a separate table below the documentation box. This consistent set of animal population statistics should be used to estimate CH_4 emissions from enteric fermentation, CH_4 and N_2O from manure management, N_2O direct emissions from soil and N_2O emissions associated with manure production, as well as emissions from the use of manure as fuel, and sewage-related emissions reported in the waste sector.

[3] Including data on dairy heifers, if available.

Documentation box:

Used IPCC Tier 1 Enteric Fermentation Methodology - Refer to National Inventory Report for detailed methodologies

[1] Annual Activity Data: Cattle, Sheep, Swine & Poultry

[1] Census Activity Data (five year interval): Goats, Horses, Mules & Asses

[2] Refer to National Inventory Report for livestock population sources and methodologies

TABLE 4.B(a) SECTORAL BACKGROUND DATA FOR AGRICULTURE

CH_4 Emissions from Manure Management

(Sheet 1 of 1)

Canada
1990
Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA AND OTHER RELATED INFORMATION							IMPLIED EMISSION FACTORS
	Population size [1]	Allocation by climate region [2]			Typical animal mass	VS[3] daily excretion	CH_4 producing potential (Bo)[3]	CH_4
		Cool	Temperate	Warm				
	(1000 head)	(%)			(kg)	(kg dm/head/yr)	(CH_4 m^3/kg VS)	(kg CH_4/head/yr)
1. Cattle	11,890	100.0			NA	NA	NA	6.86
Dairy Cattle[4]	1,991	100.0			NA	NA	NA	36.00
Non-Dairy Cattle	9,900	100.0			NA	NA	NA	1.00
2. Buffalo	NE	100.0			NA	NA	NA	0.00
3. Sheep	412	100.0			NA	NA	NA	0.33
4. Goats	19	100.0			NA	NA	NA	0.00
5. Camels and Llamas	NO	100.0			NA	NA	NA	0.00
6. Horses	356	100.0			NA	NA	NA	0.00
7. Mules and Asses	0	100.0			NA	NA	NA	0.00
8. Swine	10,211	100.0			NA	NA	NA	10.00
9. Poultry	448,863	100.0			NA	NA	NA	0.08

[1] See footnote 1 to Table 4.A of this common reporting format.

[2] Climate regions are defined in terms of annual average temperature as follows: Cool=less than 15°C; Temperate=15°C to 25°C inclusive; and Warm=greater than 25°C (see Table 4.2 of the IPCC Guidelines (Volume 3, Reference Manual, p. 4.8)).

[3] VS=Volatile Solids; Bo=maximum methane producing capacity for manure IIPCC Guidelines (Volume 3, Reference Manual, p.4.23 and p. 4.15.

[4] Including data on diary heifers, if available.

Documentation Box:

IPCC default factors and method used assuming 100% cool climate - Refer to National Inventory Report for detailed methodologies.

[1] Annual Activity Data: Cattle, Sheep, Swine & Poultry

[1] Census Activity Data (five year interval): Goats, Horses, Mules & Asses

[3] Refer to National Inventory Report for livestock population sources and methodologies

Additional information (for Tier 2)

Animal category[a]	Indicator	Climate region	Animal waste management system					
			Anaerobic lagoon	Liquid system	Daily spread	Solid storage and dry lot	Pasture range paddock	Other
Dairy Cattle	Allocation(%)	Cool	NA	NA	NA	NA	NA	NA
		Temperate	NA	NA	NA	NA	NA	NA
		Warm	NA	NA	NA	NA	NA	NA
	MCF[b]	Cool	NA	NA	NA	NA	NA	NA
		Temperate	NA	NA	NA	NA	NA	NA
		Warm	NA	NA	NA	NA	NA	NA
Non-Dairy Cattle	Allocation(%)	Cool	NA	NA	NA	NA	NA	NA
		Temperate	NA	NA	NA	NA	NA	NA
		Warm	NA	NA	NA	NA	NA	NA
	MCF[b]	Cool	NA	NA	NA	NA	NA	NA
		Temperate	NA	NA	NA	NA	NA	NA
		Warm	NA	NA	NA	NA	NA	NA
Swine	Allocation(%)	Cool	NA	NA	NA	NA	NA	NA
		Temperate	NA	NA	NA	NA	NA	NA
		Warm	NA	NA	NA	NA	NA	NA
	MCF[b]	Cool	NA	NA	NA	NA	NA	NA
		Temperate	NA	NA	NA	NA	NA	NA
		Warm	NA	NA	NA	NA	NA	NA

[a] Copy the above table as many times as necessary.

[b] MCF = Methane Conversion Factor (IPCC Guidelines, (Volume 3. Reference Manual, p. 4.9)). In the case of use of other climate region categorization, please replace the entries in the cells with the climate regions for which the MCFs are specified.

TABLE 4.B(b) SECTORAL BACKGROUND DATA FOR AGRICULTURE

Canada

N_2O Emissions from Manure Management

1990

(Sheet 1 of 1)

Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA AND OTHER RELATED INFORMATION								IMPLIED EMISSION FACTORS	
	Population size [1] (1000s)	Nitrogen excretion (kg N/head/yr)	Nitrogen excretion per animal waste management system (kg N/yr)						Emission factor per animal waste management system (kg N_2O-N/kg N)	
			Anaerobic lagoon	Liquid system	Daily spread	Solid storage and dry lot	Pasture range and paddock	Other		
Non-Dairy Cattle	1,991	56.4	0.0	1.0	0.0	56.0	42.0	1.0	Anaerobic lagoon	0.000
Dairy Cattle	9,900	70.5	0.0	53.0	0.0	27.0	20.0	0.0	Liquid system	1,526.297
Sheep	412	6.8	0.0	0.0	0.0	46.0	44.0	10.0	Solid storage and dry lot	53,885.276
Swine	10,211	15.0	0.0	90.0	0.0	10.0	0.0	0.0	Other	9,390.035
Poultry	448,863	0.5	0.0	4.0	0.0	0.0	1.0	95.0		
Other *(please specify)*										
Total per AWMS[2]			**0.0**	**148.0**	**0.0**	**139.0**	**107.0**	**106.0**		

[1] See footnote 1 to Table 4.A of this common reporting format.

[2] AWMS - Animal Waste Management System.

Documentation box:

Refer to National Inventory Report for detailed methodologies.

[1] Annual Activity Data: Cattle, Sheep, Swine & Poultry

[1] Census Activity Data (five year interval): Goats, Horses, Mules & Asses

TABLE 4.C SECTORAL BACKGROUND DATA FOR AGRICULTURE

Canada

Rice Cultivation

1990

(Sheet 1 of 1)

Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		ACTIVITY DATA AND OTHER RELATED INFORMATION			IMPLIED EMISSION FACTOR [1]	EMISSIONS
		Harvested area [2] (10^{-9} m^2/yr)	Organic amendments added[3]: type	Organic amendments added[3]: (t/ha)	CH_4 (g/m^2)	CH_4 (Gg)
1. Irrigated						**0.00**
Continuously Flooded		NO	NO	NO	0.00	NO
Intermittently Flooded	Single Aeration	NO	NO	NO	0.00	NO
	Multiple Aeration	NO	NO	NO	0.00	NO
2. Rainfed						**0.00**
Flood Prone		NO	NO	NO	0.00	NO
Drought Prone		NO	NO	NO	0.00	NO
3. Deep Water						**0.00**
Water Depth 50-100 cm		NO	NO	NO	0.00	NO
Water Depth > 100 cm		NO	NO	NO	0.00	NO
4. Other *(please specify)*						**0.00**
					0.00	
Upland Rice[4]		NO				
Total [4]		0.00				

[1] The implied emission factor takes account of all relevant corrections for continuously flooded fields without organic amendment plus the correction for the organic amendments, if used, as well as of the effect of different soil characteristics, if taken into account, on methane emissions.

[2] Harvested area is the cultivated area multiplied by the number of cropping seasons per year.

[3] Specify dry weight or wet weight for organic amendments.

[4] These rows are included to allow comparison with the international statistics. Upland rice emissions are assumed to be zero and are ignored in the emission calculations.

Documentation box:

When dissagregating by more than one region within a country, provide additional information in the documentation box.
Where available, provide activity data and scaling factors by soil type and rice cultivar.

TABLE 4.D SECTORAL BACKGROUND DATA FOR AGRICULTURE

Canada

Agricultural Soils[1]

1990

(Sheet 1 of 1)

Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA AND OTHER RELATED INFORMATION Description	Value	IMPLIED EMISSION FACTORS Unit		EMISSIONS ($Gg N_2O$)
Direct Soil Emissions	**N input to soils (kg N/yr)**				**75.43**
Synthetic Fertilizers	Use of synthetic fertilizers (kg N/yr)	1,196,322,000	(kg N2O-N/kg N)[2]	0.006	10.84
Animal Wastes Applied to Soils	Nitrogen input from manure applied to soils (kg N/yr)	799,463,361	(kg N2O-N/kg N)[2]	0.009	11.49
N-fixing Crops	Dry pulses and soybeans produced (kg dry biomass/yr)	1,673,271,000	(kg N2O-N/kg dry biomass)[2]	0.005	12.07
Crop Residue	Dry production of other crops (kg dry biomass/yr)	88,450,931,500	(kg N2O-N/kg dry biomass)[2]	0.000	27.90
Cultivation of Histosols	Area of cultivated organic soils (ha)	1,669,920	(kg N2O-N/ha)[2]	5.000	13.12
Animal Production	**N excretion on pasture range and paddock (kg N/yr)**	**273,116,517**	**(kg N2O-N/kg N)[2]**	**0.020**	**8.58**
Indirect Emissions					**31.99**
Atmospheric Deposition	Volatized N (NH_3 and NOx) from fertilizers and animal wastes (kg N/yr)	334,148,176	(kg N2O-N/kg N)[2]	0.010	5.25
Nitrogen Leaching and Run-off	N from fertilizers and animal wastes that is lost through leaching and run off (kg N/yr)	100,244,453	(kg N2O-N/kg N)[2]	0.170	26.74
Other *(please specify)*					**0.00**
				0.000	

Additional information

Fraction [a]	Description	Value
$Frac_{BURN}$	Fraction of crop residue burned	0.00
$Frac_{FUEL}$	Fraction of livestock N excretion in excrements burned for fuel	0.00
$Frac_{GASF}$	Fraction of synthetic fertilizer N applied to soils that volatilizes as NH_3 and NOx	0.10
$Frac_{GASM}$	Fraction of livestock N excretion that volatilizes as NH_3 and NOx	0.20
$Frac_{GRAZ}$	Fraction of livestock N excreted and deposited onto soil during grazing	0.00
$Frac_{LEACH}$	Fraction of N input to soils that is lost through leaching and runoff	0.30
$Frac_{NCRBF}$	Fraction of N in N-fixing crop	0.03
$Frac_{NCRO}$	Fraction of N in non-N-fixing crop	0.02
$Frac_{R}$	Fraction or crop residue removed from the field as crop	0.45

[a] Use the fractions as specified in the IPCC Guidelines (Volume 3. Reference Manual, pp. 4.92 - 4.113).

[1] See footnote 4 to Summary 1.A. of this common reporting format. Parties which choose to report CO_2 emissions and removals from agricultural soils under 4.D. Agricultural Soils category should indicate the amount [Gg] of these emissions or removals and relevant additional information (activity data, implied emissions factors) in the documentation box.

[2] To convert from N_2O-N to N_2O emissions, multiply by 44/28.

Documentation box:

[1] CO_2 emissions from Agricultural Soil for 1990 is 7255 Gg. CO_2 emission estimates are based on agricultural soil management practices. Refer to National Inventory Report for relevant methodology.

TABLE 4.E SECTORAL BACKGROUND DATA FOR AGRICULTURE

Canada

Prescribed Burning of Savannas

1990

(Sheet 1 of 1)

Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA AND OTHER RELATED INFORMATION					IMPLIED EMISSION FACTORS		EMISSIONS	
	Area of savanna burned (k ha/yr)	Average aboveground biomass density (t dm/ha)	Fraction of savanna burned	Biomass burned (Gg dm)	Nitrogen fraction in biomass	(kg/t dm)		(Gg)	
						CH_4	N_2O	CH_4	N_2O
(specify ecological zone)								0.00	0.00
	NO	NO	NO	NO	NO	0.00	0.00	NO	NO

Additional information

	Living	Dead
Fraction of aboveground biomass	NO	NO
Fraction oxidized	NO	NO
Carbon fraction	NO	NO

Documentation box:

TABLE 4.F SECTORAL BACKGROUND DATA FOR AGRICULTURE
Field Burning of Agricultural Residues
(Sheet 1 of 1)

Canada
1990
Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA AND OTHER RELATED INFORMATION						IMPLIED EMISSION FACTORS		EMISSIONS	
	Crop production (t)	Residue/ Crop ratio	Dry matter fraction	Fraction burned in fields	Biomass burned (Gg dm)	Nitrogen fraction in biomass of residues	CH_4 (kg/t dm)	N_2O (kg/t dm)	CH_4 (Gg)	N_2O (Gg)
1. Cereals									**0.00**	**0.00**
Wheat	NO	NO	NO	NO	NO	NO	0.00	0.00	NO	NO
Barley	NO	NO	NO	NO	NO	NO	0.00	0.00	NO	NO
Maize	NO	NO	NO	NO	NO	NO	0.00	0.00	NO	NO
Oats	NO	NO	NO	NO	NO	NO	0.00	0.00	NO	NO
Rye	NO	NO	NO	NO	NO	NO	0.00	0.00	NO	NO
Rice	NO	NO	NO	NO	NO	NO	0.00	0.00	NO	NO
Other *(please specify)*									0.00	0.00
							0.00	0.00		
2. Pulse [1]									**0.00**	**0.00**
Dry bean	NO	NO	NO	NO	NO	NO	0.00	0.00	NO	NO
Peas	NO	NO	NO	NO	NO	NO	0.00	0.00	NO	NO
Soybeans	NO	NO	NO	NO	NO	NO	0.00	0.00	NO	NO
Other *(please specify)*									0.00	0.00
							0.00	0.00		
3 Tuber and Root									**0.00**	**0.00**
Potatoes	NO	NO	NO	NO	NO	NO	0.00	0.00	NO	NO
Other *(please specify)*									0.00	0.00
							0.00	0.00		
4 Sugar Cane	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**	**0.00**	**0.00**	**NO**	**NO**
5 Other *(please specify)*									**0.00**	**0.00**
							0.00	0.00		

[1] To be used in Table 4.D of this common reporting format.

Documentation Box:

TABLE 5 SECTORAL REPORT FOR LAND-USE CHANGE AND FORESTRY
(Sheet 1 of 1)

Canada
1990
Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO_2 emissions	CO_2 removals	Net CO_2 emissions/ removals	CH_4	N_2O	NO_x	CO
	(Gg)						
Total Land-Use Change and Forestry	**257,890.00**	**-297,031.00**	**-39,141.00**	**65.70**	**3.50**	**0.00**	**0.00**
A. Changes in Forest and Other Woody Biomass Stocks	**244,949.00**	**-290,173.00**	**-45,224.00**				
1. Tropical Forests	NO	NO	0.00				
2. Temperate Forests	NA	IE	0.00				
3. Boreal Forests	NA	IE	0.00				
4. Grasslands/Tundra	NE	NE	0.00				
5. Other *(please specify)*	244,949.00	-290,173.00	-45,224.00				
Harvested Wood [1]	146,260.00	NA	146,260.00				
Domestic Firewood	29,462.00	NA	29,462.00				
Slash	69,227.00	NA	69,227.00				
Canadian Wood Production Forest		-290,173.00	-290,173.00				
			0.00				
B. Forest and Grassland Conversion [2]	**1,419.00**			**0.00**	**0.00**	**0.00**	**0.00**
1. Tropical Forests	NO			NO	NO	NO	NO
2. Temperate Forests	581.00			NE	NE	NE	NE
3. Boreal Forests	645.00			NE	NE	NE	NE
4. Grasslands/Tundra	61.00			NE	NE	NE	NE
5. Other *(please specify)*	132.00			0.00	0.00	0.00	0.00
Agriculture	114.00			NE	NE	NE	NE
Unknown	18.00			NE	NE	NE	NE
C. Abandonment of Managed Lands	**0.00**	**-3,245.00**	**-3,245.00**				
1. Tropical Forests	NO	NO	0.00				
2. Temperate Forests	NA	-3,131.00	-3,131.00				
3. Boreal Forests	NA	-114.00	-114.00				
4. Grasslands/Tundra	NA	0.00	0.00				
5. Other *(please specify)*	0.00	0.00	0.00				
			0.00				
D. CO_2 Emissions and Removals from Soil	**7,139.00**	**-3,613.00**	**3,526.00**				
Cultivation of Mineral Soils	IE	NA	0.00				
Cultivation of Organic Soils	IE	NA	0.00				
Liming of Agricultural Soils	IE	NA	0.00				
Forest Soils	NE	NE	0.00				
Other *(please specify)* [3]	7,139.00	-3,613.00	3,526.00				
Land Conversion	7,139.00	NA	7,139.00				
Abandonment of Managed Lands	NA	-3,613.00	-3,613.00				
		\	0.00				
E. Other *(please specify)*	**4,383.00**	**0.00**	**4,383.00**	**65.70**	**3.50**	**0.00**	**0.00**
Prescribed Burning	IE	NA	0.00	46.50	1.90	NE	NE
Other anthropogenic fires in the Wood Production Fore	IE	NA	0.00	11.20	0.90	NE	NE
Anthropogenic fires outside the Wood Production Fore	4,383.00	NA	4,383.00	8.00	0.70	NE	NE
			0.00				

[1] Following the IPCC Guidelines, the harvested wood should be reported under Changes in Forest and Other Woody Biomass Stocks (Volume 3. Reference Manual, p.5.17).
[2] Include only the emissions of CO_2 from Forest and Grassland Conversion. Associated removals should be reported under section D.
[3] Include emissions from soils not reported under sections A, B and C.

Note: See footnote 4 to Summary 1.A of this common reporting format.

TABLE 5.A SECTORAL BACKGROUND DATA FOR LAND-USE CHANGE AND FORESTRY
Changes in Forest and Other Woody Biomass Stocks
(Sheet 1 of 1)

Canada
1990
Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES			ACTIVITY DATA		IMPLIED EMISSION FACTORS	ESTIMATES
			Area of forest/biomass stocks (kha)	Average annual growth rate (t dm/ha)	Implied carbon uptake factor (t C/ha)	Carbon uptake increment (Gg C)
Tropical	Plantations	*Acacia spp.*	NO	NO	0.00	NO
		Eucalyptus spp.	NO	NO	0.00	NO
		Tectona grandis	NO	NO	0.00	NO
		Pinus spp	NO	NO	0.00	NO
		Pinus caribaea	NO	NO	0.00	NO
		Mixed Hardwoods	NO	NO	0.00	NO
		Mixed Fast-Growing Hardwoods	NO	NO	0.00	NO
		Mixed Softwoods	NO	NO	0.00	NO
	Other Forests	Moist	NO	NO	0.00	NO
		Seasonal	NO	NO	0.00	NO
		Dry	NO	NO	0.00	NO
	Other *(specify)*				0.00	
					0.00	
Temperate	Plantations		NA	NA	0.00	IE
			NA	NA	0.00	IE
	Commercial	Evergreen	NA	NA	0.00	IE
		Deciduous	NA	NA	0.00	IE
	Other *(specify)*				0.00	
	Wood Production Forest (aggregate value)		122,842.00	1.26	0.63	77,688.00
					0.00	
Boreal			NA	NA	0.00	IE
			Number of trees (1000s of trees)	Annual growth rate (kt dm/1000 trees)	Carbon uptake factor (t C/tree)	Carbon uptake increment (Gg C)
Non-Forest Trees *(specify type)*						1,450.00
Non-forest agricultural trees			NA	NA	0.00	1,423.00
Non-forest urban trees			NA	NA	0.00	27.00
					0.00	
					Total annual growth increment (Gg C)	79,138.00
					Gg CO_2	290,172.67

	Amount of biomass removed (kt dm)	Carbon emission factor (t C/t dm)	Carbon release (Gg C)
Total biomass removed in Commercial Harvest	79,778.00	0.50	39,889.00
Traditional Fuelwood Consumed	16,070.00	0.50	8,035.00
Total Other Wood Use		0.00	
		Total Biomass Consumption from Stocks [1] (Gg C)	47,924.00
		Other Changes in Carbon Stocks [2] (Gg C)	18,880.00
		Gg CO_2	244,948.00

Net annual carbon uptake (+) or release (-) (Gg C)	12,334.00
Net CO_2 emissions (-) or removals (+) (Gg CO_2)	45,224.67

[1] Make sure that the quantity of biomass burned off-site is subtracted from this total.
[2] The net annual carbon uptake/release is determined by comparing the annual biomass growth versus annual harvest, including the decay of forest products and slash left during harvest. The IPCC Guidelines recommend default assumption that all carbon removed in wood and other biomass from forests is oxidized in the year of removal. The emissions from decay could be included under Other Changes in Carbon Stocks.

Note: Sectoral background data tables on Land-Use Change and Forestry should be filled in only by Parties using the IPCC default methodology. Parties that use country specific methods and models should report information on them in a transparent manner, also providing suggestions for a possible sectoral background data table suitable for their calculation method.

Documentation box:
Data for Temperate and Boreal Forests are included in the Aggregate value for the Wood Production Forest.

TABLE 5.B SECTORAL BACKGROUND DATA FOR LAND-USE CHANGE AND FORESTRY Canada
Forest and Grassland Conversion 1990
(Sheet 1 of 1) Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		ACTIVITY DATA AND OTHER RELATED INFORMATION							IMPLIED EMISSION FACTORS					EMISSIONS				
		On and off site burning				Decay of above-ground biomass[1]			Burning				Decay	Burning				Decay
									On site			Off site		On site			Off site	
		Area converted annually	Annual net loss of biomass	Quantity of biomass burned		Average area converted	Average annual net loss of biomass	Average quantity of biomass left to decay	CO_2	CH_4	N_2O	CO_2	CO_2	CO_2	CH_4	N_2O	CO_2	CO_2
				On site	Off site													
Vegetation types		(kha)	(kt dm)	(kt dm)	(kt dm)	(kha)	(t dm/ha)	(kt dm)	(t/ha)					(Gg)				
Tropical	Wet/Very Moist	NO	NO	NO	NO	NO	NO	NO	0.00	0.00	0.00	0.00	0.00	NO	NO	NO	NO	NO
	Moist, short dry season	NO	NO	NO	NO	NO	NO	NO	0.00	0.00	0.00	0.00	0.00	NO	NO	NO	NO	NO
	Moist, long dry season	NO	NO	NO	NO	NO	NO	NO	0.00	0.00	0.00	0.00	0.00	NO	NO	NO	NO	NO
	Dry	NO	NO	NO	NO	NO	NO	NO	0.00	0.00	0.00	0.00	0.00	NO	NO	NO	NO	NO
	Montane Moist	NO	NO	NO	NO	NO	NO	NO	0.00	0.00	0.00	0.00	0.00	NO	NO	NO	NO	NO
	Montane Dry	NO	NO	NO	NO	NO	NO	NO	0.00	0.00	0.00	0.00	0.00	NO	NO	NO	NO	NO
Tropical Savanna/Grasslands		NO	NO	NO	NO	NO	NO	NO	0.00	0.00	0.00	0.00	0.00	NO	NO	NO	NO	NO
Temperate	Coniferous	IE	IE	NA	NA	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	IE	NA
	Broadleaf	IE	IE	NA	NA	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	IE	NA
	Mixed Broadleaf/ Coniferous	3.10	317.00	NA	NA	NA	NA	NA	#VALUE!	#VALUE!	#VALUE!	187.42	0.00	NA	NA	NA	581.00	NA
Grasslands		58.70	33.00	NA	NA	NA	NA	NA	#VALUE!	#VALUE!	#VALUE!	1.04	0.00	NA	NA	NA	61.00	NA
Boreal	Mixed Broadleaf/ Coniferous	8.80	352.00	NA	NA	NA	NA	NA	#VALUE!	#VALUE!	#VALUE!	73.30	0.00	NA	NA	NA	645.00	NA
	Coniferous	IE	IE	NA	NA	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	IE	NA
	Forest-tundra	IE	IE	NA	NA	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	IE	NA
Grasslands/Tundra		NA	NA	NA	NA	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA
Other *(please specify)*									0.00	0.00	0.00	0.00	0.00					
Agriculture to Urban/Other		6.20	62.00	NA	NA	NA	NA	NA	#VALUE!	#VALUE!	#VALUE!	18.39	0.00	NA	NA	NA	114.00	NA
Unkown to Urban/Other		4.80	10.00	NA	NA	NA	NA	NA	#VALUE!	#VALUE!	#VALUE!	3.75	0.00	NA	NA	NA	18.00	NA
									0.00	0.00	0.00	0.00	0.00					
Total														**0.00**	**0.00**	**0.00**	**1,419.00**	**0.00**

[1] Activity data are for default 10-year average. Specify the average decay time which is appropriate for the local conditions, if other than 10 years.

Emissions/Removals	On site	Off site
Immediate carbon release from burning	0.00	2.69
Total On site and Off site (Gg C)	2.69	
Delayed emissions from decay (Gg C)	0.00	
Total annual carbon release (Gg C)	2.69	
Total annual CO_2 emissions (Gg CO_2)	1,419.00	

Additional information

Fractions	On site	Off site
Fraction of biomass burned (average)	NA	NA
Fraction which oxidizes during burning (average)	NA	NA
Carbon fraction of aboveground biomass (average)	NA	NA
Fraction left to decay (average)	NA	
Nitrogen-carbon ratio	NA	

Note: Sectoral background data tables on Land-Use Change and Forestry should be filled in only by Parties using the IPCC default methodology. Parties that use country specific methods and models should report information on them in a transparent manner, also providing suggestions for a possible sectoral background data table suitable for their calculation method.

Documentation box:

Disaggregated data for Boreal and Temperate Forests are included in the "Mixed Boradleaf/Coniferous" sub-categories, hence the IE indicator.

TABLE 5.C SECTORAL BACKGROUND DATA FOR LAND-USE CHANGE AND FORESTRY

Canada

Abandonment of Managed Lands

1990

(Sheet 1 of 1)

Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		ACTIVITY DATA AND OTHER RELATED INFORMATION						IMPLIED EMISSION FACTORS		ESTIMATES	
		Total area abandoned and regrowing [1]		Annual rate of aboveground biomass growth		Carbon fraction of aboveground biomass		Rate of aboveground biomass carbon uptake		Annual carbon uptake in aboveground biomass	
Original natural ecosystems		first 20 years (kha)	>20 years (kha)	first 20 years (t dm/ha)	>20 years (t dm/ha)	first 20 years	>20 years	first 20 years (t C/ha/yr)	>20 years (t C/ha/yr)	first 20 years (Gg C/yr)	>20 years (Gg C/yr)
Tropical	Wet/Very Moist	NO	NO	NO	NO	NO	NO	0.00	0.00	NO	NO
	Moist, short dry season	NO	NO	NO	NO	NO	NO	0.00	0.00	NO	NO
	Moist, long dry season	NO	NO	NO	NO	NO	NO	0.00	0.00	NO	NO
	Dry	NO	NO	NO	NO	NO	NO	0.00	0.00	NO	NO
	Montane Moist	NO	NO	NO	NO	NO	NO	0.00	0.00	NO	NO
	Montane Dry	NO	NO	NO	NO	NO	NO	0.00	0.00	NO	NO
Tropical Savanna/Grasslands		NO	NO	NO	NO	NO	NO	0.00	0.00	NO	NO
Temperate	Mixed Broadleaf/Coniferous	884.00	913.00	0.95	0.95	0.50	0.50	0.48	0.48	420.00	434.00
	Coniferous	IE	IE	IE	IE	IE	IE	0.00	0.00	IE	IE
	Broadleaf	IE	IE	IE	IE	IE	IE	0.00	0.00	IE	IE
Grasslands		301.00	330.00	0.00	0.00	0.50	0.50	0.00	0.00	0.00	0.00
Boreal	Mixed Broadleaf/Coniferous	131.00	163.00	0.21	0.21	0.50	0.50	0.11	0.10	14.00	17.00
	Coniferous	IE	IE	IE	IE	IE	IE	0.00	0.00	IE	IE
	Forest-tundra	IE	IE	IE	IE	IE	IE	0.00	0.00	IE	IE
Grasslands/Tundra		NA	NA	NA	NA	NA	NA	0.00	0.00	NA	NA
Other *(please specify)*								0.00	0.00		
								0.00	0.00		

Total annual carbon uptake (Gg C)	885.00
Total annual CO_2 removal (Gg CO_2)	3,245.00

[1] If lands are regenerating to grassland, then the default assumption is that no significant changes in above-ground biomass occur.

Note: Sectoral background data tables on Land-use Change and Forestry should be filled in only by Parties using the IPCC default methodology. Parties that use country specific methods and models should report information on them in a transparent manner, also providing suggestions for a possible sectoral background data table suitable for their calculation method.

Documentation box:

Disaggregated data for Temperate and Boreal Forests are included in the "Mixed Broadleaf/Coniferous" sub-categories, hence the indicator IE.

TABLE 5.D SECTORAL BACKGROUND DATA FOR LAND-USE CHANGE AND FORESTRY

CO_2 Emissions and Removals from Soil

(Sheet 1 of 1)

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA	IMPLIED EMISSION FACTORS	ESTIMATES
	Land area (Mha)	Average annual rate of soil carbon uptake/removal (Mg C/ha/yr)	Net change in soil carbon in mineral soils (Tg C over 20 yr)
Cultivation of Mineral Soils [1]			**0.00**
High Activity Soils	IE	0.00	IE
Low Activity Soils	IE	0.00	IE
Sandy	IE	0.00	IE
Volcanic	IE	0.00	IE
Wetland (Aquic)	IE	0.00	IE
Other *(please specify)*			0.00
		0.00	
	Land area (ha)	**Annual loss rate (Mg C/ha/yr)**	**Carbon emissions from organic soils (Mg C/yr)**
Cultivation of Organic Soils	**IE**		**0.00**
Cool Temperate			**0.00**
Upland Crops	IE	0.00	IE
Pasture/Forest	IE	0.00	IE
Warm Temperate			**0.00**
Upland Crops	NO	0.00	NO
Pasture/Forest	NO	0.00	NO
Tropical			**0.00**
Upland Crops	NO	0.00	NO
Pasture/Forest	NO	0.00	NO
	Total annual amount of lime (Mg)	**Carbon conversion factor**	**Carbon emissions from liming (Mg C)**
Liming of Agricultural Soils			**0.00**
Limestone $Ca(CO_3)$	IE	0.00	IE
Dolomite $CaMg(CO_3)_2$	IE	0.00	IE

Total annual net carbon emissions from agriculturally impacted soils (Gg C)	0.00
Total annual net CO_2 emissions from agriculturally impacted soils (Gg CO_2)	0.00

Additional information

Year	Climate [a]	land-use/ management system [a]	Soil type					
			High activity soils	Low activity soils	Sandy	Volcanic	Wetland (Aquic)	Organic soil
			percent distribution (%)					
20 years prior	*(e.g. tropical, dry)*	*(e.g. savanna)*						
		(e.g. irrigated cropping)						
inventory year								

[a] These should represent the major types of land management systems per climate regions presented in the country as well as ecosystem types which were either converted to agriculture (e.g., forest, savanna, grassland) or have been derived from previous agricultural land-use (e.g., abandoned lands, reforested lands). Systems should also reflect differences in soil carbon stocks that can be related to differences in management (IPCC Guidelines (Volume 2. Workbook, Table 5-9, p. 5.26, and Appendix (pp. 5-31 - 5.38)).

[1] The information to be reported under Culitvation of Mineral Soils aggregates data per soil type over all land-use/management systems. This refers to land area data and to the emission estimates and implied emissions factors accordingly.

Note: Sectoral background data tables on Land-Use Change and Forestry should be filled in only by Parties using the IPCC default methodology. Parties that use country specific methods and models should report information on them in a transparent manner, also providing suggestions for a possible sectoral background data table suitable for their calculation method.

Documentation Box:

Greenhouse gas emissions/removals associated with the cultivation and liming of agricultural soils are included in the "Agriculture" section.

TABLE 6 SECTORAL REPORT FOR WASTE
(Sheet 1 of 1)

Canada
1990
Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO_2[(1)]	CH_4	N_2O	NO_x	CO	NMVOC	SO_2
	(Gg)						
Total Waste	**253.52**	**899.67**	**2.98**	**0.00**	**0.00**	**0.00**	**0.00**
A. Solid Waste Disposal on Land	**0.00**	**882.25**		**0.00**	**0.00**	**0.00**	
1. Managed Waste Disposal on Land	NO	882.25		NE	NE	NE	
2. Unmanaged Waste Disposal Sites	0.00	0.00		NE	NE	NE	
3. Other *(please specify)*	0.00	0.00		0.00	0.00	0.00	
B. Wastewater Handling		**16.98**	**2.81**	**0.00**	**0.00**	**0.00**	
1. Industrial Wastewater		0.00	NE	NE	NE	NE	
2. Domestic and Commercial Wastewater		16.98	2.81	NE	NE	NE	
3. Other *(please specify)*		0.00	0.00	0.00	0.00	0.00	
C. Waste Incineration	**253.52**	**0.44**	**0.17**	**NE**	**NE**	**NE**	**NE**
D. Other *(please specify)*	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

(1) Note that CO_2 from Waste Disposal and Incineration source categories should only be included if it stems from non-biological or inorganic waste sources.

TABLE 6.A SECTORAL BACKGROUND DATA FOR WASTE
Solid Waste Disposal
(Sheet 1 of 1)

Canada
1990
Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA AND OTHER RELATED INFORMATION				IMPLIED EMISSION FACTOR		EMISSIONS[1]	
	Annual MSW at the SWDS (Gg)	MCF	DOC degraded (Gg)	CH_4 recovery[2] (Gg)	CH_4 (t /t MSW)	CO_2 (t /t MSW)	CH_4 (Gg)	CO_2[3] (Gg)
1 Managed Waste Disposal on Land	NA	NA	NA	210.60	0.00	0.00	882.25	NO
2 Unmanaged Waste Disposal Sites	NA	NA	NA	NA	0.00	0.00	0.00	0.00
- deep (>5 m)					0.00	0.00		
- shallow (<5 m)					0.00	0.00		
3 Other *(please specify)*							0.00	0.00
					0.00	0.00		

Additional information

Description	Value
Total population (1000s)[a]	27,790.60
Urban population (1000s)[a]	NA
Waste generation rate (kg/capita/day)	2.35
Fraction of MSW disposed to SWDS	NA
Fraction of DOC in MSW	NA
Fraction of wastes incinerated	NA
Fraction of wastes recycled	NA
CH4 oxidation factor (b)	NA
CH_4 fraction in landfill gas	NA
Number of SWDS recovering CH_4	NA
CH_4 generation rate constant (k)[c]	NA
Time lag considered (yr)[c]	NA
Composition of landfilled waste (%)	NA
Paper and paperboard	NA
Food and garden waste	NA
Plastics	NA
Glass	NA
Textiles	NA
Other *(specify)*	
other - inert	
other - organic	

TABLE 6.C SECTORAL BACKGROUND DATA FOR WASTE
Waste Incineration
(Sheet 1 of 1)

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA Amount of incinerated wastes (Gg)	IMPLIED EMISSION FACTOR			EMISSIONS		
		CO_2 (kg/t waste)	CH_4 (kg/t waste)	N_2O (kg/t waste)	CO_2[3] (Gg)	CH_4 (Gg)	N_2O (Gg)
Waste Incineration *(please specify)*					253.52	0.44	0.17
(biogenic)[3] *& Sewage Sludge*	NA	0.00	0.00	0.00	1,140.90	0.44	NE
MSW	NA	0.00	0.00	0.00	253.52	NE	0.17
		0.00	0.00	0.00			

MSW - Municipal Solid Waste, SWDS - Solid Waste Disposal Site, MCF - Methane Correction Factor, DOC - Degradable Organic Carbon (IPCC Guidelines (Volume 3. Reference Manual, section 6.2.4)). MSW includes household waste, yard/garden waste, commercial/market waste and organic industrial solid waste. MSW should not include inorganic industrial waste such as construction or demolition materials.

(1) Actual emissions (after recovery).

(2) CH_4 recovered and flared or utilized.

(3) Under Waste Disposal, CO_2 emissions should be reported only when the disposed wastes are combusted at the disposal site which might constitute a management practice. CO_2 emissions from non-biogenic wastes are included in the totals, while the CO_2 emissions from biogenic wastes are not included in the totals.

(a) Specify whether total or urban population is used and the rationale for doing so.

(b) See IPCC Guidelines (Volume 3. Reference Manual, p. 6.9).

(c) For Parties using Tier 2 methods.

Documentation box:
All relevant information used in calculation should be provided in the additional information box and in the documentation box.
Parties that use country specific models should note this with a brief rationale in the documentation box and fill the relevant cells only.

TABLE 6.B SECTORAL BACKGROUND DATA FOR WASTE
Wastewater Handling
(Sheet 1 of 1)

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA AND RELATED INFORMATION[1]				IMPLIED EMISSION FACTOR			EMISSIONS[2]		
	Total organic product		CH_4 recovered and/or flared		CH_4		N_2O[3]	CH_4		N_2O[3]
	Wastewater	Sludge	Wastewater	Sludge	Wastewater	Sludge		Wastewater	Sludge	
	(Gg DC[1]/yr)		(Gg)		(kg/kg DC)	(kg/kg DC)	(kg/kg DC)	(Gg)	(Gg)	(Gg)
Industrial Wastewater	NA	NA	NA	NA	0.00	0.00	NA	NE	NE	NE
Domestic and Commercial Wastewater	NA	NA	NA	NA	0.00	0.00	NA	16.98	NE	IE
Other *(please specify)*								0.00	0.00	0.00
					0.00	0.00				

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	ACTIVITY DATA AND OTHER RELATED INFORMATION			IMPLIED EMISSION FACTOR	EMISSIONS
	Population[4] (1000s)	Protein consumption (protein in kg/person/yr)	N fraction (kg N/kg protein)	N_2O (kg N_2O-N/kg sewage N produced)	N_2O (Gg)
N_2O from human sewage[3]	27,791	NA	NA	0.00	2.81

[1] DC - degradable organic component. DC indicators are COD (Chemical Oxygen Demand) for industrial wastewater and BOD (Biochemical Oxygen Demand) for Domestic/Commercial wastewater/sludge (IPCC Guidelines (Volume 3. Reference Manual, pp. 6.14, 6.18)).

[2] Actual emissions (after recovery).

[3] Parties using other methods for estimation of N_2O emissions from human sewage or wastewater treatment should provide corresponding information on methods, activity data and emission factors used in the documentation box. Use the table to provide aggregate data.

[4] Specify whether total or urban population is used in the calculations and the rationale for doing so. Provide explanation in the documentation box.

Documentation box:

[2] Assumed no CH_4 recovery for Domestic and Commerical Wasterwater Handling

[3] Refer to National Inventory Report for corresponding information on methods, activiity data and emission factors for the Waste sector.

[4] Total population was used for wastewater handling emission estimates. Refer to National Inventory Report for detailed Waste methodologies an explanation.

Additional information

	Domestic	Industrial
Total wastewater (m^3):	NA	NA
Treated wastewater (%):	NA	NA

Wastewater streams:	Wastewater output (m^3)	DC ($kgCOD/m^3$)
Industrial wastewater	NA	NA
Iron and steel	NA	NA
Non-ferrous	NA	NA
Fertilizers	NA	NA
Food and beverage	NA	NA
Paper and pulp	NA	NA
Organic chemicals	NA	NA
Other *(specify)*	NA	NA

	DC (kg BOD/1000 person/yr)
Domestic and Commercial	NA
Other	NA

Handling systems:	Industrial wastewater treated (%)	Ind. sludge treated (%)	Domestic wastewater treated (%)	Domestic sludge treated (%)
Aerobic	NA	NA	NA	NA
Anaerobic	NA	NA	NA	NA
Other *(specify)*	NA	NA	NA	NA

SUMMARY 1.A SUMMARY REPORT FOR NATIONAL GREENHOUSE GAS INVENTORIES (IPCC TABLE 7A)
(Sheet 1 of 3)

Canada
1990
Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO_2 emissions	CO_2 removals	CH_4	N_2O	$HFCs^{(1)}$		$PFCs^{(1)}$		SF_6		NO_x	CO	NMVOC	SO_2
					P	A	P	A	P	A				
	(Gg)				CO_2 equivalent (Gg)				(Gg)					
Total National Emissions and Removals	**465,755.39**	**-39,141.00**	**3,541.73**	**202.56**	**0.00**	**0.00**	**0.00**	**5,975.11**	**0.00**	**0.12**	**0.00**	**0.00**	**0.00**	**0.00**
1. Energy	**425,522.60**		**1,595.92**	**27.96**							**0.00**	**0.00**	**0.00**	**0.00**
A. Fuel Combustion — Reference Approach [2]	453,993.82													
A. Fuel Combustion — Sectoral Approach [2]	415,689.94		258.04	27.96							0.00	0.00	0.00	0.00
1. Energy Industries	144,599.39		1.72	2.58							0.00	0.00	0.00	0.00
2. Manufacturing Industries and Construction	56,067.14		1.54	1.43							0.00	0.00	0.00	0.00
3. Transport	145,833.36		24.87	20.77							0.00	0.00	0.00	0.00
4. Other Sectors	69,190.05		229.91	3.18							0.00	0.00	0.00	0.00
5. Other	0.00		0.00	0.00							0.00	0.00	0.00	0.00
B. Fugitive Emissions from Fuels	9,832.66		1,337.88	0.00							0.00	0.00	0.00	0.00
1. Solid Fuels	0.00		91.16	0.00							0.00	0.00	0.00	0.00
2. Oil and Natural Gas	9,832.66		1,246.72	0.00							0.00	0.00	0.00	0.00
2. Industrial Processes	**32,724.27**		**0.00**	**37.08**	**0.00**	**0.00**	**0.00**	**5,975.11**	**0.00**	**0.12**	**0.00**	**0.00**	**0.00**	**0.00**
A. Mineral Products	8,160.68		0.00	0.00							0.00	0.00	0.00	0.00
B. Chemical Industry	3,126.54		0.00	37.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C. Metal Production	10,221.52		0.00	0.00				5,975.11		0.12	0.00	0.00	0.00	0.00
D. Other Production [3]	IE										0.00	0.00	0.00	0.00
E. Production of Halocarbons and SF_6						0.00		0.00		0.00				
F. Consumption of Halocarbons and SF_6					0.00	0.00	0.00	0.00	0.00	0.00				
G. Other	11,215.53		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

P = Potential emissions based on Tier 1 approach of the IPCC Guidelines.

A = Actual emissions based on Tier 2 approach of the IPCC Guidelines.

[1] The emissions of HFCs and PFCs are to be expressed as CO_2 equivalent emissions. Data on disaggregated emissions of HFCs and PFCs are to be provided in Table 2(II) of this common reporting format.

[2] For verification purposes, countries are asked to report the results of their calculations using the Reference approach and to explain any differences with the Sectoral approach. Where possible, the calculations using the Sectoral approach should be used for estimating national totals. Do not include the results of both the Reference approach and the Sectoral approach in national totals.

[3] Other Production includes Pulp and Paper and Food and Drink Production.

Note: The numbering of footnotes to all tables containing more than one sheet continue to the next sheet. Common footnotes are given only once at the first point of reference.

SUMMARY 1.A SUMMARY REPORT FOR NATIONAL GREENHOUSE GAS INVENTORIES (IPCC TABLE 7A)
(Sheet 2 of 3)

Canada
1990
Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO_2 emissions	CO_2 removals	CH_4	N_2O	HFCs [1]		PFCs[1]		SF_6		NO_x	CO	NMVOC	SO_2
					P	A	P	A	P	A				
	(Gg)				CO_2 equivalent (Gg)						(Gg)			
3. Solvent and Other Product Use	**0.00**			**1.35**							**NE**	**NE**	**0.00**	NE
4. Agriculture	**7,255.00**	**0.00**	**980.44**	**129.69**							0.00	0.00	0.00	0.00
A. Enteric Fermentation			761.62											
B. Manure Management			218.82	13.69									0.00	
C. Rice Cultivation			0.00										0.00	
D. Agricultural Soils	[4] 7,255.00	[4] NA	0.00	116.00									0.00	
E. Prescribed Burning of Savannas			0.00	0.00							NE	NE	NE	
F. Field Burning of Agricultural Residues			0.00	0.00							0.00	0.00	0.00	
G. Other			0.00	0.00							0.00	0.00	0.00	NE
5. Land-Use Change and Forestry	[5] **0.00**	[5] **-39,141.00**	**65.70**	**3.50**							**0.00**	**0.00**	**0.00**	**0.00**
A. Changes in Forest and Other Woody Biomass Stocks	[5] 0.00	[5] -45,224.00												
B. Forest and Grassland Conversion	1,419.00		0.00	0.00							0.00	0.00	NE	
C. Abandonment of Managed Lands	[5] 0.00	[5] -3,245.00												
D. CO_2 Emissions and Removals from Soil	[5] 3,526.00	[5] 0.00												
E. Other	[5] 4,383.00	[5] 0.00	65.70	3.50							0.00	0.00	NE	NE
6. Waste	**253.52**		**899.67**	**2.98**							**0.00**	**0.00**	**0.00**	**0.00**
A. Solid Waste Disposal on Land	[6] 0.00		882.25									0.00	0.00	
B. Wastewater Handling			16.98	2.81							0.00	0.00	0.00	
C. Waste Incineration	[6] 253.52		0.44	0.17							NE	NE	NE	NE
D. Other	0.00		0.00	0.00							0.00	0.00	0.00	0.00
7. Other *(please specify)*	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

[4] According to the IPCC Guidelines (Volume 3. Reference Manual, pp. 4.2, 4.87), CO_2 emissions from agricultural soils are to be included under Land-Use Change and Forestry (LUCF). At the same time, the Summary Report 7A (Volume 1. Reporting Instructions, Tables.27) allows for reporting CO_2 emissions or removals from agricultural soils, either in the Agriculture sector, under D. Agricultural Soils or in the Land-Use Change and Forestry sector under D. Emissions and Removals from Soil. Parties may choose either way to report emissions or removals from this source in the common reporting format, but the way they have chosen to report should be clearly indicated, by inserting explanatory comments to the corresponding cells of Summary 1.A and Summary 1.B. Double-counting of these emissions or removals should be avoided. Parties should include these emissions or removals consistently in Table8(a) (Recalculation - Recalculated data) and Table10 (Emission trends).

[5] Please do not provide an estimate of both CO_2 emissions and CO_2 removals. "Net" emissions (emissions - removals) of CO_2 should be estimated and a single number placed in either the CO_2 emissions or CO_2 removals column, as appropriate. Please note that for the purposes of reporting, the signs for uptake are always (-) and for emissions (+).

[6] Note that CO_2 from Waste Disposal and Incineration source categories should only be included if it stems from non-biogenic or inorganic waste streams.

SUMMARY 1.A SUMMARY REPORT FOR NATIONAL GREENHOUSE GAS INVENTORIES (IPCC TABLE 7A)
(Sheet 3 of 3)

Canada
1990
Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO_2 emissions	CO_2 removals	CH_4	N_2O	HFCs		PFCs		SF_6		NO_x	CO	NMVOC	SO_2
					P	A	P	A	P	A				
	(Gg)				CO_2 equivalent (Gg)						(Gg)			
Memo Items: [7]														
International Bunkers	**5,723.55**		**0.15**	**0.70**							**0.00**	**0.00**	**0.00**	**0.00**
Aviation	2,729.01		0.08	0.27							NE	NE	NE	NE
Marine	2,994.54		0.07	0.44							NE	NE	NE	NE
Multilateral Operations	**0.00**		**0.00**	**0.00**							**NE**	**NE**	**NE**	**NE**
CO_2 Emissions from Biomass	**58,153.26**													

[7] Memo Items are not included in the national totals.

SUMMARY 1.B SHORT SUMMARY REPORT FOR NATIONAL GREENHOUSE GAS INVENTORIES (IPCC TABLE 7B)
(Sheet 1 of 1)

Canada
1990
Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		CO_2 emissions	CO_2 removals	CH_4	N_2O	HFCs[1]		PFCs[1]		SF_6		NO_x	CO	NMVOC	SO_2
						P	A	P	A	P	A				
		(Gg)				CO_2 equivalent (Gg)				(Gg)					
Total National Emissions and Removals		**465,755.39**	**-39,141.00**	**3,541.73**	**202.56**	**0.00**	**0.00**	**0.00**	**5,975.11**	**0.00**	**0.12**	**0.00**	**0.00**	**0.00**	**0.00**
1. Energy		**425,522.60**		**1,595.92**	**27.96**							**0.00**	**0.00**	**0.00**	**0.00**
A. Fuel Combustion	Reference Approach[2]	453,993.82													
	Sectoral Approach[2]	415,689.94		258.04	27.96							0.00	0.00	0.00	0.00
B. Fugitive Emissions from Fuels		9,832.66		1,337.88	0.00							0.00	0.00	0.00	0.00
2. Industrial Processes		**32,724.27**		**0.00**	**37.08**	**0.00**	**0.00**	**0.00**	**5,975.11**	**0.00**	**0.12**	**0.00**	**0.00**	**0.00**	**0.00**
3. Solvent and Other Product Use		**0.00**			**1.35**							**NE**	**NE**	**0.00**	**NE**
4. Agriculture [3]		**7,255.00**	**0.00**	**980.44**	**129.69**							**0.00**	**0.00**	**0.00**	**0.00**
5. Land-Use Change and Forestry		[4] **0.00**	[4] **-39,141.00**	**65.70**	**3.50**							**0.00**	**0.00**	**0.00**	**0.00**
6. Waste		**253.52**		**899.67**	**2.98**							**0.00**	**0.00**	**0.00**	**0.00**
7. Other		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Memo Items:															
International Bunkers		**5,723.55**		**0.15**	**0.70**							**0.00**	**0.00**	**0.00**	**0.00**
Aviation		2,729.01		0.08	0.27							NE	NE	NE	NE
Marine		2,994.54		0.07	0.44							NE	NE	NE	NE
Multilateral Operations		**0.00**		**0.00**	**0.00**							**NE**	**NE**	**NE**	**NE**
CO_2 Emissions from Biomass		**58,153.26**													

P = Potential emissions based on Tier 1 approach of the IPCC Guidelines.

A = Actual emissions based on Tier 2 approach of the IPCC Guidelines.

[1] The emissions of HFCs and PFCs are to be expressed as CO_2 equivalent emissions. Data on disaggregated emissions of HFCs and PFCs are to be provided in Table 2(II) of this common reporting format.

[2] For verification purposes, countries are asked to report the results of their calculations using the Reference approach and to explain any differences with the Sectoral approach in document box of Table1.A(c). Where possible, the calculations using the Sectoral approach should be used for estimating national totals. Do not include the results of both the Reference approach and the Sectoral approach in national totals.

[3] See footnote 4 to Summary 1.A.

[4] Please do not provide an estimate of both CO_2 emissions and CO_2 removals. "Net" emissions (emissions - removals) of CO_2 should be estimated and a single number placed in either the CO_2 emissions or CO_2 removals column, as appropriate. Please note that for the purposes of reporting, the signs for uptake are always (-) and for emissions (+).

SUMMARY 2 SUMMARY REPORT FOR CO_2 EQUIVALENT EMISSIONS
(Sheet 1 of 1)

Canada
1990
Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO_2 [(1)]	CH_4	N_2O	HFCs	PFCs	SF_6	Total
	CO_2 equivalent (Gg)						
Total (Net Emissions) [(1)]	**426,614.39**	**74,376.36**	**62,792.66**	**0.00**	**5,975.11**	**2,870.39**	**572,628.91**
1. Energy	**425,522.60**	**33,514.36**	**8,666.34**				**467,703.30**
A. Fuel Combustion (Sectoral Approach)	415,689.94	5,418.87	8,666.34				429,775.15
1. Energy Industries	144,599.39	36.16	800.00				145,435.54
2. Manufacturing Industries and Construction	56,067.14	32.29	443.73				56,543.16
3. Transport	145,833.36	522.31	6,437.49				152,793.15
4. Other Sectors	69,190.05	4,828.12	985.13				75,003.30
5. Other	0.00	0.00	0.00				0.00
B. Fugitive Emissions from Fuels	9,832.66	28,095.49	0.00				37,928.14
1. Solid Fuels	0.00	1,914.38	0.00				1,914.38
2. Oil and Natural Gas	9,832.66	26,181.11	0.00				36,013.76
2. Industrial Processes	**32,724.27**	**0.00**	**11,495.32**	**0.00**	**5,975.11**	**2,870.39**	**53,065.08**
A. Mineral Products	8,160.68	0.00	0.00				8,160.68
B. Chemical Industry	3,126.54	0.00	11,495.32	0.00	0.00	0.00	14,621.86
C. Metal Production	10,221.52	0.00	0.00		5,975.11	2,870.39	19,067.01
D. Other Production	IE						0.00
E. Production of Halocarbons and SF_6				0.00	0.00	0.00	0.00
F. Consumption of Halocarbons and SF_6				0.00	0.00	0.00	0.00
G. Other	11,215.53	0.00	0.00	0.00	0.00	0.00	11,215.53
3. Solvent and Other Product Use	**0.00**		**418.69**				**418.69**
4. Agriculture	**7,255.00**	**20,589.30**	**40,204.19**				**68,048.49**
A. Enteric Fermentation		15,994.11					15,994.11
B. Manure Management		4,595.19	4,243.64				8,838.83
C. Rice Cultivation		0.00					0.00
D. Agricultural Soils[(2)]	7,255.00	0.00	35,960.55				43,215.55
E. Prescribed Burning of Savannas		0.00	0.00				0.00
F. Field Burning of Agricultural Residues		0.00	0.00				0.00
G. Other		0.00	0.00				0.00
5. Land-Use Change and Forestry[(1)]	**-39,141.00**	**1,379.70**	**1,085.00**				**-36,676.30**
6. Waste	**253.52**	**18,893.00**	**923.13**				20,069.64
A. Solid Waste Disposal on Land	0.00	18,527.15					18,527.15
B. Wastewater Handling		356.65	869.68				1,226.33
C. Waste Incineration	253.52	9.20	53.44				316.16
D. Other	0.00	0.00	0.00				0.00
7. Other *(please specify)*	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
							0.00
Memo Items:							
International Bunkers	**5,723.55**	**3.12**	**218.33**				**5,945.00**
Aviation	2,729.01	1.71	82.95				2,813.67
Marine	2,994.54	1.41	135.38				3,131.34
Multilateral Operations	**0.00**	**0.00**	**0.00**				**0.00**
CO_2 Emissions from Biomass	**58,153.26**						**58,153.26**

[(1)] For CO_2 emissions from Land-Use Change and Forestry the net emissions are to be reported. Please note that for the purposes of reporting, the signs for uptake are always (-) and for emissions (+).
[(2)] See footnote 4 to Summary 1.A of this common reporting format.

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO_2 emissions	CO_2 removals	Net CO_2 emissions / removals	CH_4	N_2O	Total emissions
Land-Use Change and Forestry	CO_2 equivalent (Gg)					
A. Changes in Forest and Other Woody Biomass Stocks	244,949.00	-290,173.00	-45,224.00			-45,224.00
B. Forest and Grassland Conversion	1,419.00		1,419.00	0.00	0.00	1,419.00
C. Abandonment of Managed Lands	0.00	-3,245.00	-3,245.00			-3,245.00
D. CO_2 Emissions and Removals from Soil	7,139.00	-3,613.00	3,526.00			3,526.00
E. Other	4,383.00	0.00	4,383.00	1,379.70	1,085.00	6,847.70
Total CO_2 Equivalent Emissions from Land-Use Change and Forestry	257,890.00	-297,031.00	-39,141.00	1,379.70	1,085.00	-36,676.30

Total CO_2 Equivalent Emissions without Land-Use Change and Forestry [(a) & (b)]	609,305.21
Total CO_2 Equivalent Emissions with Land-Use Change and Forestry [(a)]	572,628.91

(a) The information in these rows is requested to facilitate comparison of data, since Parties differ in the way they report emissions and removals from Land-Use Change and Forestry.
(b) National Net CO2 Equivalent Emissions without CO2 from LUCF is found on Table 8(a) Recalculation (Total CO2 Equivalent Emissions without Land-Use Change and Forestry and on Table 10: Emission Trends (Summary))

SUMMARY 3 SUMMARY REPORT FOR METHODS AND EMISSION FACTORS USED
(Sheet 1 of 2)

Canada
1990
Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO_2		CH_4		N_2O		HFCs		PFCs		SF_6	
	Method applied [1]	Emission factor [2]	Method applied [1]	Emission factor [2]	Method applied [1]	Emission factor [2]	Method applied [1]	Emission factor [2]	Method applied [1]	Emission factor [2]	Method applied [1]	Emission factor [2]
1. Energy	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**						
A. Fuel Combustion	NA	NA	NA	NA	NA	NA						
1. Energy Industries	T1	CS	T1	CS	T1	CS						
2. Manufacturing Industries and Construction	T1	CS	T1	CS	T1	CS						
3. Transport	CS	CS	CS	CS	CS	CS						
4. Other Sectors	T1	CS	T1	CS	T1	CS						
5. Other												
B. Fugitive Emissions from Fuels	NA	NA	NA	NA	NA	NA						
1. Solid Fuels	CS	CS	CS	CS	CS	CS						
2. Oil and Natural Gas	CS	CS	CS	CS	CS	CS						
2. Industrial Processes	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**						
A. Mineral Products	T1	CS	NA	NA	NA	NA						
B. Chemical Industry	T1	CS	NA	NA	NA	NA						
C. Metal Production	CS	CS	NA	NA	NA	NA						
D. Other Production	CS	CS										
E. Production of Halocarbons and SF_6							NA	NA	NA	NA	NA	NA
F. Consumption of Halocarbons and SF_6							NA	NA	T2	PS	T3	PS
G. Other												

[1] Use the following notation keys to specify the method applied: D (IPCC default), RA (Reference Approach), T1 (IPCC Tier 1), T1a, T1b, T1c (IPCC Tier 1a, Tier 1b and Tier 1c, respectively), T2 (IPCC Tier 2), T3 (IPCC Tier 3), C (CORINAIR), CS (Country Specific), M (Model). If using more than one method, enumerate the relevant methods. Explanations of any modifications to the default IPCC methods, as well as information on the proper use of methods per source category where more than one method is indicated, and explanations on the country specific methods, should be provided in the documentation box of the relevant Sectoral background data table.

[2] Use the following notation keys to specify the emission factor used: D (IPCC default), C (CORINAIR), CS (Country Specific), PS (Plant Specific), M (Model). Where a mix of emission factors has been used, use different notations in one and the same cells with further explanation in the documentation box of the relevant Sectoral background data table.

SUMMARY 3 SUMMARY REPORT FOR METHODS AND EMISSION FACTORS USED
(Sheet 2 of 2)

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO_2		CH_4		N_2O		HFCs		PFCs		SF_6	
	Method applied [1]	Emission factor [2]	Method applied [1]	Emission factor [2]	Method applied [1]	Emission factor [2]	Method applied [1]	Emission factor [2]	Method applied [1]	Emission factor [2]	Method applied [1]	Emission factor [2]
3. Solvent and Other Product Use	**NA**	**NA**			**CS**	**CS**						
4. Agriculture	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**						
A. Enteric Fermentation			T1	D								
B. Manure Management			T1	D	T1	D						
C. Rice Cultivation			NA	NA								
D. Agricultural Soils	CS	CS	NA	NA	T1	D						
E. Prescribed Burning of Savannas			NA	NA	NA	NA						
F. Field Burning of Agricultural Residues			NA	NA	NA	NA						
G. Other			NA	NA	NA	NA						
5. Land-Use Change and Forestry	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**						
A. Changes in Forest and Other Woody Biomass Stocks	CS/D	CS										
B. Forest and Grassland Conversion	CS/D	CS	NA	NA	NA	NA						
C. Abandonment of Managed Lands	D	CS										
D. CO_2 Emissions and Removals from Soil	CS/D	CS										
E. Other	CS	CS	CS	CS	CS	CS						
6. Waste	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**						
A. Solid Waste Disposal on Land	NA	NA	ethod applied (1)	CS								
B. Wastewater Handling			CS	CS	D	D						
C. Waste Incineration	CS	CS	CS	CS	CS	CS						
D. Other	NA	NA	NA	NA	NA	NA						
7. Other *(please specify)*	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**						

TABLE 7 OVERVIEW TABLE[(1)] FOR NATIONAL GREENHOUSE GAS INVENTORIES (IPCC TABLE 8A)
(Sheet 1 of 3)

Canada
1990
Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO_2		CH_4		N_2O		HFCs		PFCs		SF_6		NO_x		CO		NMVOC		SO_2	
	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality
Total National Emissions and Removals	all	H	all	M	all	L	NA	-	all	L	Part	H	NE	-	NE	-	NE	-	NE	-
1 Energy	all	H	all	M	all	L							NE	-	NE	-	NE	-	NE	-
A. Fuel Combustion Activities																				
Reference Approach	all	H																		
Sectoral Approach	all	H	all	M	all	L							NE	-	NE	-	NE	-	NE	-
1. Energy Industries	all	H	all	M	all	L							NE	-	NE	-	NE	-	NE	-
2. Manufacturing Industries and Construction	all	H	all	M	all	L							NE	-	NE	-	NE	-	NE	-
3. Transport	all	H	all	M	all	L							NE	-	NE	-	NE	-	NE	-
4. Other Sectors	all	H	all	M	all	L							NE	-	NE	-	NE	-	NE	-
5. Other	NA	-	NA	-	NA	-							NE	-	NE	-	NE	-	NE	-
B. Fugitive Emissions from Fuels	all	M	all	L	NO	-							NE	-	NE	-	NE	-	NE	-
1. Solid Fuels	NE	-	all	L	NO	-														
2. Oil and Natural Gas	all	M	all	M	NO	-							NE	-	NE	-	NE	-	NE	-
2 Industrial Processes	all	M	NO	-	Part	M	NA	-	all	L	Part	H	NE	-	NE	-	NE	-	NE	-
A. Mineral Products	all	M	NO	-	NO	-							NE	-	NE	-	NE	-	NE	-
B. Chemical Industry	Part	H	NO	-	Part	M	NA	-	NA	-			NE	-	NE	-	NE	-	NE	-
C. Metal Production	Part	H	NO	-	NO	-			all	L	Part	H	NE	-	NE	-	NE	-	NE	-
D. Other Production	NO	-											NE	-	NE	-	NE	-	NE	-
E. Production of Halocarbons and SF_6							NO	-	NO	-	NO	-								

[(1)] This table is intended to be used by Parties to summarize their own assessment of completeness (e.g. partial, full estimate, not estimated) and quality (high, medium, low) of major source/sink inventory estimates. The latter could be understood as a quality assessment of the uncertainty of the estimates. This table might change once the IPCC completes its work on managing uncertainties of GHG inventories. The title of the table was kept for consistency with the current table in the IPCC Guidelines.

Note: To fill in the table use the notation key as given in the IPCC Guidelines (Volume 1. Reporting Instructions, Tables. 37).

Canadian Comments

All (Full estimate of all possible sources): "All" is entered here when "All significant sources" have been accounted for in the present inventory.(I.e. some insignificant sources may have been neglected)
Part (Partly Estimated): "Part" is entered when data representing a significant source is unavailable and hence not included in the present inventory.
Total National Emissions and Removals: Estimate code at the fully aggregated level does not address the exclusion of certain LUFC categories. (e.g. Carbon Stored in wood products)

TABLE 7 OVERVIEW TABLE FOR NATIONAL GREENHOUSE GAS INVENTORIES (IPCC TABLE 8A)
(Sheet 2 of 3)

Canada
1990
Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO_2		CH_4		N_2O		HFCs		PFCs		SF_6		NO_x		CO		NMVOC		SO_2	
	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality
2 Industrial Processes (continued)																				
F. Consumption of Halocarbons and SF_6																				
Potential [2]							NO	-	NO	-	NE	-								
Actual [3]							NO	-	NO	-	NE	-								
G. Other	all	M	NA	-	NA	-	NA	-	NA	-	NA	-	NE	-	NE	-	NE	-	NE	-
3 Solvent and Other Product Use	NE	-			all	M							NE	-	NE	-	NE	-	NE	-
4 Agriculture	all	L	all	L	all	L							NE	-	NE	-	NE	-	NE	-
A. Enteric Fermentation			all	M																
B. Manure Management			all	L	all	L											NE	-		
C. Rice Cultivation			NO	-													NE	-		
D. Agricultural Soils	all	L	NA	-	all	L											NE	-		
E. Prescribed Burning of Savannas			NO	-	NO	-							NE	-	NE	-	NE	-	NE	-
F. Field Burning of Agricultural Residues			NO	-	NO	-							NE	-	NE	-	NE	-	NE	-
G. Other			NA	-	NA	-							NE	-	NE	-	NE	-	NE	-
5 Land-Use Change and Forestry	Part	L	Part	L	Part	L							NE	-	NE	-	NE	-	NE	-
A. Changes in Forest and Other Woody Biomass Stocks	all	L																		
B. Forest and Grassland Conversion	all	L	NE	-	NE	-							NE	-	NE	-	NE	-		

[2] Potential emissions based on Tier 1 approach of the IPCC Guidelines.
[3] Actual emissions based on Tier 2 approach of the IPCC Guidelines.

TABLE 7 OVERVIEW TABLE FOR NATIONAL GREENHOUSE GAS INVENTORIES (IPCC TABLE 8A)
(Sheet 3 of 3)

Canada
1990
Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO_2		CH_4		N_2O		HFCs		PFCs		SF_6		NO_x		CO		NMVOC		SO_2	
	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality	Estimate	Quality
5 Land-Use Change and Forestry (continued)																				
C. Abandonment of Managed Lands	all	L																		
D. CO_2 Emissions and Removals from Soil	all	L																		
E. Other	all	L	all	L	all	L							NE	-	NE	-	NE	-	NE	-
6 Waste	all	L	all	L	all	L							NE	-	NE	-	NE	-	NE	-
A. Solid Waste Disposal on Land	NA	-	all	M											NE	-	NE	-		
B. Wastewater Handling			all	L	all	L							NE	-	NE	-	NE	-		
C. Waste Incineration	all	L	all	L	all	L							NE	-	NE	-	NE	-	NE	-
D. Other	NA	-	NA	-	NA	-							NE	-	NE	-	NE	-	NE	-
7 Other ***(please specify)***	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-
	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-
Memo Items:																				
International Bunkers	Part	H	Part	M	Part	L							NE	-	NE	-	NE	-	NE	-
Aviation	Part	H	Part	M	Part	L							NE	-	NE	-	NE	-	NE	-
Marine	Part	H	Part	M	Part	L							NE	-	NE	-	NE	-	NE	-
Multilateral Operations	IE	-	IE	-	IE	-							NE	-	NE	-	NE	-	NE	-
CO_2 Emissions from Biomass	Part	M																		

TABLE 8(a) RECALCULATION - RECALCULATED DATA

Recalculated year: 1990

(Sheet 1 of 2)

Canada
1990
Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		CO_2			CH_4			N_2O		
		Previous submission	Latest submission	Difference[1]	Previous submission	Latest submission	Difference[1]	Previous submission	Latest submission	Difference[1]
		CO_2 equivalent (Gg)		(%)	CO_2 equivalent (Gg)		(%)	CO_2 equivalent (Gg)		(%)
Total National Emissions and Removals		**470,333.05**	**475,082.44**	**1.01**	**73,819.14**	**74,376.36**	**0.75**	**57,099.32**	**62,792.66**	**9.97**
1. Energy		**421,629.84**	**425,522.60**	**0.92**	**33,524.23**	**33,514.36**	**-0.03**	**8,844.04**	**8,666.34**	**-2.01**
1.A.	Fuel Combustion Activities	411,797.18	415,689.94	0.95	5,428.74	5,418.87	-0.18	8,844.04	8,666.34	-2.01
1.A.1.	Energy Industries	140,556.19	144,599.39	2.88	33.40	36.16	8.27	824.74	800.00	-3.00
1.A.2.	Manufacturing Industries and Construction	54,656.61	56,067.14	2.58	34.68	32.29	-6.90	501.22	443.73	-11.47
1.A.3.	Transport	146,674.91	145,833.36	-0.57	532.40	522.31	-1.90	6,513.22	6,437.49	-1.16
1.A.4.	Other Sectors	69,909.47	69,190.05	-1.03	4,828.26	4,828.12	0.00	1,004.86	985.13	-1.96
1.A.5.	Other			0.00			0.00			0.00
1.B.	Fugitive Emissions from Fuels			0.00			0.00			0.00
1.B.1.	Solid fuel			0.00			0.00			0.00
1.B.2.	Oil and Natural Gas			0.00			0.00			0.00
2. Industrial Processes		**31,867.64**	**32,724.27**	**2.69**			**0.00**			**0.00**
2.A.	Mineral Products			0.00			0.00			0.00
2.B.	Chemical Industry			0.00			0.00			0.00
2.C.	Metal Production			0.00			0.00			0.00
2.D.	Other Production			0.00						
2.G.	Other	10,358.90	11,215.53	8.27			0.00			0.00
3. Solvent and Other Product Use				**0.00**						**0.00**
4. Agriculture				**0.00**	**20,022.21**	**20,589.30**	**2.83**	**34,333.15**	**40,204.19**	**17.10**
4.A.	Enteric Fermentation						0.00			
4.B.	Manure Management				4,028.10	4,595.19	14.08	3,880.11	4,243.64	9.37
4.C.	Rice Cultivation						0.00			
4.D.	Agricultural Soils [2]			0.00			0.00	30,453.03	35,960.55	18.09
4.E.	Prescribed Burning of Savannas						0.00			0.00
4.F.	Field Burning of Agricultural Residues						0.00			0.00
4.G.	Other						0.00			0.00
5. Land-Use Change and Forestry (net)				**0.00**			**0.00**			**0.00**
5.A.	Changes in Forest and Other Woody Biomass Stocks			0.00						
5.B.	Forest and Grassland Conversion			0.00			0.00			0.00
5.C.	Abandonment of Managed Lands			0.00						
5.D.	CO_2 Emissions and Removals from Soil			0.00						
5.E.	Other			0.00			0.00			0.00

[1] Estimate the percentage change due to recalculation with respect to the previous submission (Percentage change = 100% x [(LS-PS)/PS], where LS = Latest submission and PS = Previous submission.
All cases of recalculation of the estimate of the source/sink category, should be addressed and explained in Table 8(b) of this common reporting format.

[2] See footnote 4 to Summary 1.A of this common reporting format.

TABLE 8(a) RECALCULATION - RECALCULATED DATA
Recalculated year: 1990
(Sheet 2 of 2)

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		CO_2			CH_4			N_2O		
		Previous submission	Latest submission	Difference[1]	Previous submission	Latest submission	Difference[1]	Previous submission	Latest submission	Difference[1]
		CO_2 equivalent (Gg)		(%)	CO_2 equivalent (Gg)		(%)	CO_2 equivalent (Gg)		(%)
6. Waste				**0.00**			**0.00**			**0.00**
6.A.	Solid Waste Disposal on Land			0.00			0.00			
6.B.	Wastewater Handling						0.00			0.00
6.C.	Waste Incineration			0.00			0.00			0.00
6.D.	Other			0.00			0.00			0.00
7. Other *(please specify)*				**0.00**			**0.00**			**0.00**
				0.00			0.00			0.00
Memo Items:										
International Bunkers		**4,922.09**	**5,724.08**	**16.29**	**2.93**	**3.12**	**6.46**	**180.22**	**218.33**	**21.15**
Multilateral Operations				**0.00**			**0.00**			**0.00**
CO_2 Emissions from Biomass		**69,404.13**	**58,153.26**	**-16.21**						

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		HFCs			PFCs			SF_6		
		Previous submission	Latest submission	Difference[1]	Previous submission	Latest submission	Difference[1]	Previous submission	Latest submission	Difference[1]
		CO_2 equivalent (Gg)		(%)	CO_2 equivalent (Gg)		(%)	CO_2 equivalent (Gg)		(%)
Total Actual Emissions				**0.00**			**0.00**			**0.00**
2.C.3.	Aluminium Production						0.00			0.00
2.E.	Production of Halocarbons and SF_6			0.00			0.00			0.00
2.F.	Consumption of Halocarbons and SF_6			0.00			0.00			0.00
	Other			0.00			0.00			0.00
Potential Emissions from Consumption of HFCs/PFCs and SF_6										

	Previous submission	Latest submission	Difference[1]
	CO_2 equivalent (Gg)		(%)
Total CO_2 Equivalent Emissions with Land-Use Change and Forestry [3]	610,097.01	621,096.96	1.80
Total CO_2 Equivalent Emissions without Land-Use Change and Forestry [3]	600,769.96	611,769.91	1.83

[3] The information in these rows is requested to facilitate comparison of data, since Parties differ in the way they report emissions and removals from Land-Use Change and Forestry.

TABLE 8(b) RECALCULATION - EXPLANATORY INFORMATION
(Sheet 1 of 1)

Specify the sector and source/sink category[1] where changes in estimates have occurred:		GHG	RECALCULATION DUE TO			
			CHANGES IN:			Addition/removal/ replacement of source/sink categories
			Methods [2]	Emission factors [2]	Activity data [2]	
1.A.1	Energy Industries	CO2, CH4 & N2O	NA	NA	Revised Energy Data	
1.A.2	Manufacturing Industries and Construction	CO2, CH4 & N2O	NA	NA	Revised Energy Data	
1.A.3	Transport	CO2, CH4 & N2O	NA	NA	Revised Energy Data	
1.A.4	Other Sectors	CO2, CH4 & N2O	NA	NA	Revised Energy Data	
1.A.5	Other	CO2, CH4 & N2O	NA	NA	Revised Energy Data	
2.G	Other	CO2	NA	NA	Revised Energy Data	
4.A	Enteric Fermentation	CH4	NA	NA	Revised Animal Population Data	
4.B	Manure Management	CH4 & N2O	NA	NA	Revised Animal Population Data	
4.D	Agriucltural Soil	N2O	NA	New Emission Factor - IPCC EF	New Cultivated Organic Soil Data	
Memo Items	International Bunkers	CO2, CH4 & N2O	NA	NA	Revised Energy Data	
Memo Items:	CO2 Emissions from Biomass	CO2	Double Counting	NA	NA	

[1] Enter the identification code of the source/sink category (e.g. 1.B.1) in the first column and the name of the category (e.g. Fugitive Emissions from Solid Fuels) in the second column of the table (see Table 8(a)) .

[2] Explain changes in methods, emission factors and activity data that have resulted in recalculation of the estimate of the source/sink as indicated in Table 8(a). Include relevant changes in the assumptions and coefficients under the "Methods" column.

Documentation box: Use the documentation box to report the justifications of the changes as to improvements in the accuracy, completeness and consistency of the inventory.

Sources and sinks not reported (NE)[1]			
GHG	**Sector[2]**	**Source/sink category [2]**	**Explanation**
CO_2	1. Energy	Fugitive Emissions from Solid Fuel: Coal Mining and Handling - Underground & Surface Mines	Unknown emission rates & activity data
	1. Energy	Fugitive Emissions from Oil and Natural Gas: 1.B.2.a. Oil, iv. Refinin/Storage & v. Distribution of oil products	Unknown activitiy data
	2. Industrial Processes	A. Mineral Products: 5. Asphalt Roofing, 6. Road Paving with Asphalt & 7. Glass Production	Unknown activitiy data
	5. Land-use Change and Forestry	B. Forest and Grassland Conversion	It is not quantitatively known how much biomass loss occurs by what route (e.g. on-site or off-site biomass burning, decay). Because there is insufficient information to make these allocations at this time, only total C emissions from land conversion were estimated.
	5. Land-use Change and Forestry	D. CO_2 Emissions and Removals from soils - Forest Soils	CO_2 fluxes from the soils of the Wood Production Forest are not quantitatively known, neither are there estimates of altered fluxes after natural or anthropogenic disturbances. Total CO_2 emissions from soils associated with forest conversion into agricultural or urban land were provided.
CH_4	1. Energy	Fugitive Emissions from Oil and Natural Gas: 1.B.2.a. Oil, iv. Refinin/Storage & v. Distribution of oil products	Unknown emission rates and activity data
	2. Industrial Processes	B. Chemical Industry: 1. Ammonia Production, 4. Carbide Production (Silicon Carbide & Calcium Carbide) & 6. Other (Carbon Black, Ethylene, Dichloroethylene, Styrene & Methanol)	Unknown emission rates
	2. Industrial Processes	C. Metal Production: 1. Iron and Steel Production (Coke) & 3. Aluminum Production	Unknown emission rates
	2. Industrial Processes	C. Metal Production: 2. Ferroalloys Production	Unknown emission rates & activity data
	2. Industrial Processes	G. Other & Undifferentiated Production	Unknown emission rates
	4. Agriculture	A. Enteric Fermentation, 2. Buffalo	Unknown emission rates & activity data
	5. Land-use Change and Forestry	B. Forest and Grassland Conversion	It is not quantitatively known how much biomass loss occurs through on-site of off-site burning upon Land Conversion. Therefore, estimates of CH4 released are unavailable
	6. Waste	Waste Incineration - MSW	Assumed negligible
	6. Waste	Wastewater Handling - Industrial Wastewater (Wastewater and Sludge) & Domestic/Commercial Wastewaster (Sludge)	Unknown emission rates & activity data
N_2O	2. Industrial Processes	B. Chemical Industry: 1. Ammonia Production & 6. Other (Ethylene)	Unknown emission rates
	2. Industrial Processes	G. Other & Undifferentiated Production	Unknown emission rates
	5. Land-use Change and Forestry	B. Forest and Grassland Conversion	It is not quantitatively known how much biomass loss occurs through on-site of off-site burning upon Land Conversion. Therefore, estimates of N2O released are unavailable.
	6. Waste	Waste Incineration - Biogenic & Sewage Sludge	Assumed negligible
	6. Waste	Wastewater Handling - Industrial Wastewater	Unknown emission rates & activity data
HFCs			
PFCs	2. Industrial Processes	F(a). Consumption of Halocarbons and SF6 (actual emissions - Tier 2)	Unknown activity data & emission rates
	2. Industrial Processes	F(p). Consumption of Halocarbons(by chemical) and SF6	Unknown activity data & emission rates
SF_6	2. Industrial Processes	F(a). Consumption of Halocarbons and SF6 (actual emissions - Tier 2); 6. Semiconductors & 7. Electrical Equipment	Unknown activity data & emission rates

	2. Industrial Processes	F(p). Consumption of Halocarbons(by chemical) and SF6; Import in Bulk & Products	Unknown activity data & emission rates: assumed bulk imports only	
	2. Industrial Processes	C. PFCs and SF6 from Metal Production; SF6 Aluminium Foundries	Unknown activity data & emission rates	

Sources and sinks reported elsewhere (IE)[3]

GHG	Source/sink category	Allocation as per IPCC Guidelines	Allocation used by the Party	Explanation
CO_2	Fuel Combustion - Manufacturing Industries and Construction	1.A.2 e. Food Processing, Beverages and Tobacco	1.A.2 f. Other	Only aggregated activity data were available.
	Fuel Combustion - Other	1.A.5 Other (Military)	1.A.3 Transportation Sector & 1.A.4 Other Sectors	Only aggregated activity data were available.
	Fugitive Emissions from Oil and Natural Gas	Fugitive Emissions from Oil and Natural Gas: 1.B.2.a. Oil, I.Exploration	1.B.2.a. Oil, ii. Production	Only aggregated activity data were available.
	Industrial Processes: Chemical Industry	B. Chemical Industry: 4. Carbide Production (Silicon Carbide & Calcium Carbide) & 5. Other (Ethylene)	1.A.2 f. Other	Only aggregated activity data were available.
	Industrial Processes:Metal Production	C. Metal Production: 3. Aluminum Production	1.A.2 f. Other	Only aggregated activity data were available.
	Industrial Processes: Other Production	D. Other Production: 2. Food and Drink	1.A.2 f. Other	Only aggregated activity data were available.
	Cultivation and Liming of Agricultural Soils	Land-use Change and Forestry	Agriculture	IPCC allows the reporting of net CO2 fluxes from agricultural soils in the Agriculture sector or the Land-use Change and Forestry sector. Canada has opted for the former.
	5.E Other anthropogenic fires in the Wood Production Forest (emissions)	LUCF, 5.E "Other"	LUCF, 5.A "Canadian Wood Production Forest"	Biomass loss (hence CO2 emissions) in the Wood Production Forest caused by natural and anthropogenic disturbances are incorporated in the estimates of the "mean annual increment" of forest biomass.
	5.E Prescribed Burning (emissions)	LUCF, 5.E "Other"	LUCF, 5.A, "Slash"	CO2 emissions from prescribed burning are included in the emissions by slash left after harvest and firewood collection.
CH_4	Fuel Combustion - Manufacturing Industries and Construction	1.A.2 e. Food Processing, Beverages and Tobacco	1.A.2 f. Other	Only aggregated activity data were available.
	Fuel Combustion - Other	1.A.5 Other (Military)	1.A.3 Transportation Sector & 1.A.4 Other Sectors	Only aggregated activity data were available.
	Fugitive Emissions from Solid Fuels	1.B.1 a. ii. Underground Mines; Post-Mining Activities	1.B.1.a. i. Underground Mines - Mining Activities	Only aggregated activity data were available.
	Fugitive Emissions from Solid Fuels	1.B.1 a. ii. Surface Mines: Post-Mining Activities	1.B.1 a. ii. Surface Mines: Mining Activities	Only aggregated activity data were available.
	Fugitive Emissions from Oil and Natural Gas	Fugitive Emissions from Oil and Natural Gas: 1.B.2.a. Oil, I.Exploration	1.B.2.a. Oil, ii. Production	Only aggregated activity data were available.
N_2O	Fuel Combustion - Other	1.A.5 Other (Military)	1.A.3 Transportation Sector & 1.A.4 Other Sectors	Only aggregated activity data were available.
	Fuel Combustion - Manufacturing Industries and Construction	1.A.2 e. Food Processing, Beverages and Tobacco	1.A.2 f. Other	Only aggregated activity data were available.
	Wastewater Handling	Domestic and Commercial Wastewater	N_2O from human sewage	CRF allocation
HFCs				
PFCs				
SF_6				

[1] Please, clearly indicate sources and sinks which are considered in the IPCC Guidelines but are not considered in the submitted inventory. Explain the reason for excluding these sources and sinks, in order to avoid arbitrary interpretations. An entry should be made for each source/sink category for which the indicator "NE" is entered in the sectoral tables.

[2] Indicate omitted source/sink following the IPCC source/sink category structure (e.g. sector: Waste, source category: Wastewater Handling).

[3] Please clearly indicate sources and sinks in the submitted inventory that are allocated to a sector other than that indicated by the IPCC Guidelines. Show the sector indicated in the IPCC Guidelines and the sector to which the source or sink is allocated in the submitted inventory. Explain the reason for reporting these sources and sinks in a different sector. An entry should be made for each source/sink for which the indicator "IE" is used in the sectoral tables.

Additional GHG emissions reported[4]						
GHG	**Source category**	**Emissions (Gg)**	**Estimated GWP value (100-year horizon)**	**Emissions CO_2 equivalent (Gg)**	**Reference to the data source of GWP value**	**Explanation**

[4] Parties are encouraged to provide information on emissions of greenhouse gases whose GWP values have not yet been agreed upon by the COP. Please include such gases in this table if they are considered in the submitted inventory. Provide additional information on the estimation methods used.

TABLE 10 EMISSIONS TRENDS (CO_2)
(Sheet 1 of 5)

Canada
1990
Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Base year[1]	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
	(Gg)										
1. Energy	**0.00**	**425,522.60**	**415,952.43**	**430,379.55**	**428,225.48**	**441,781.36**	**453,938.96**	**466,430.10**	**478,451.52**	**490,213.31**	**0.00**
A. Fuel Combustion (Sectoral Approach)	0.00	415,689.94	405,838.12	419,730.09	416,893.42	429,922.90	440,965.07	452,945.30	464,819.25	476,426.45	0.00
1. Energy Industries		144,599.39	143,299.33	151,415.25	145,493.99	148,410.88	154,327.58	154,517.31	162,940.86	181,201.44	
2. Manufacturing Industries and Construction		56,067.14	53,333.11	52,790.00	49,961.07	53,045.03	53,482.91	55,303.27	55,225.84	53,128.58	
3. Transport		145,833.36	140,611.09	144,669.11	147,814.16	155,224.21	159,440.35	163,927.85	170,334.69	174,251.80	
4. Other Sectors		69,190.05	68,594.59	70,855.72	73,624.20	73,242.79	73,714.23	79,196.87	76,317.86	67,844.63	
5. Other											
B. Fugitive Emissions from Fuels	0.00	9,832.66	10,114.31	10,649.46	11,332.06	11,858.46	12,973.89	13,484.80	13,632.27	13,786.85	0.00
1. Solid Fuels		NI	NI	NI	NI	NI	NI	NI	NI	NI	
2. Oil and Natural Gas		9,832.66	10,114.31	10,649.46	11,332.06	11,858.46	12,973.89	13,484.80	13,632.27	13,786.85	
2. Industrial Processes	**0.00**	**32,724.27**	**33,508.01**	**33,121.36**	**34,886.29**	**35,785.68**	**36,464.45**	**38,065.81**	**38,398.74**	**38,065.75**	**0.00**
A. Mineral Products		8,160.68	6,980.56	6,635.75	6,875.20	7,507.44	7,691.42	8,034.29	8,167.63	8,360.74	
B. Chemical Industry		3,126.54	3,218.71	3,317.38	3,561.96	3,700.33	4,051.22	4,128.22	4,141.79	3,898.29	
C. Metal Production		10,221.52	11,918.25	12,296.95	12,528.29	11,767.27	11,984.32	12,014.51	11,894.66	12,133.11	
D. Other Production											
E. Production of Halocarbons and SF_6											
F. Consumption of Halocarbons and SF_6											
G. Other		11,215.53	11,390.49	10,871.28	11,920.84	12,810.64	12,737.49	13,888.79	14,194.66	13,673.61	
3. Solvent and Other Product Use		**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	
4. Agriculture	**0.00**	**7,255.00**	**6,652.00**	**5,777.00**	**4,662.00**	**4,224.00**	**3,166.00**	**1,784.00**	**1,248.50**	**875.00**	**0.00**
A. Enteric Fermentation		NA	NA	NA	NA	NA	NA	NA	NA	NA	
B. Manure Management		NA	NA	NA	NA	NA	NA	NA	NA	NA	
C. Rice Cultivation		NO	NO	NO	NO	NO	NO	NO	NO	NO	
D. Agricultural Soils [2]		7,255.00	6,652.00	5,777.00	4,662.00	4,224.00	3,166.00	1,784.00	1,248.50	875.00	
E. Prescribed Burning of Savannas		NO	NO	NO	NO	NO	NO	NO	NO	NO	
F. Field Burning of Agricultural Residues		NO	NO	NO	NO	NO	NO	NO	NO	NO	
G. Other											
5. Land-Use Change and Forestry [3]	**0.00**	**-39,141.04**	**-57,269.38**	**-45,351.53**	**-34,578.61**	**-29,728.80**	**-21,128.54**	**-28,885.76**	**-23,624.91**	**-21,833.00**	**0.00**
A. Changes in Forest and Other Woody Biomass Stocks		-45,224.00	-63,839.03	-52,966.60	-43,060.69	-33,243.73	-34,192.50	-37,224.33	-34,695.57	-33,030.00	
B. Forest and Grassland Conversion		1,419.00	1,393.00	1,420.00	1,699.00	2,056.00	2,381.00	2,840.00	3,694.00	3,924.00	
C. Abandonment of Managed Lands		-3,245.00	-3,304.00	-3,271.00	-3,242.00	-3,216.00	-3,183.00	-3,157.00	-3,913.00	-4,008.00	
D. CO_2 Emissions and Removals from Soil		3,526.00	3,776.77	3,137.28	2,841.76	2,630.29	2,391.63	2,635.92	5,270.02	5,261.00	
E. Other		4,382.96	4,703.88	6,328.79	7,183.31	2,044.64	11,474.33	6,019.65	6,019.65	6,020.00	
6. Waste	**0.00**	**253.52**	**256.64**	**260.73**	**264.77**	**267.97**	**271.42**	**274.69**	**277.34**	**276.82**	**0.00**
A. Solid Waste Disposal on Land		NE	NE	NE	NE	NE	NE	NE	NE	NE	
B. Waste-water Handling		NA	NA	NA	NA	NA	NA	NA	NA	NA	
C. Waste Incineration		253.52	256.64	260.73	264.77	267.97	271.42	274.69	277.34	276.82	
D. Other											
7. Other *(please specify)*	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total Emissions/Removals with LUCF [4]	**0.00**	**426,614.35**	**399,099.71**	**424,187.10**	**433,459.92**	**452,330.20**	**472,712.28**	**477,668.84**	**494,751.19**	**507,597.87**	**0.00**
Total Emissions without LUCF[4]	**0.00**	**465,755.39**	**456,369.09**	**469,538.64**	**468,038.53**	**482,059.00**	**493,840.82**	**506,554.60**	**518,376.10**	**529,430.87**	**0.00**
Memo Items:											
International Bunkers	**0.00**	**5,724.08**	**5,581.22**	**5,865.96**	**5,310.23**	**5,649.64**	**5,915.97**	**6,159.04**	**6,037.62**	**6,653.37**	**0.00**
Aviation		2,729.27	2,482.68	2,685.15	2,472.48	2,460.75	2,603.53	3,073.52	2,991.66	2,877.64	
Marine		2,994.81	3,098.54	3,180.81	2,837.75	3,188.89	3,312.44	3,085.52	3,045.96	3,775.73	
Multilateral Operations											
CO_2 Emissions from Biomass		**58,153.26**	**59,959.51**	**62,226.56**	**61,105.73**	**64,536.06**	**66,819.47**	**66,262.59**	**70,290.76**	**62,820.69**	

(1) Fill in the base year adopted by the Party under the Convention, if different from 1990.
(2) See footnote 4 to Summary 1.A of this common reporting format.
(3) Take the net emissions as reported in Summary 1.A of this common reporting format. Please note that for the purposes of reporting, the signs for uptake are always (-) and for emissions (+).
(4) The information in these rows is requested to facilitate comparison of data, since Parties differ in the way they report CO_2 emissions and removals from Land-Use Change and Forestry.

TABLE 10 EMISSIONS TRENDS (CH_4)
(Sheet 2 of 5)

Canada
1990
Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Base year[1]	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
	(Gg)										
Total Emissions	**0.00**	**3,541.73**	**3,668.91**	**3,788.83**	**3,916.06**	**4,018.44**	**4,162.57**	**4,294.18**	**4,317.31**	**4,260.93**	**0.00**
1. Energy	**0.00**	**1,595.92**	**1,665.79**	**1,791.20**	**1,854.46**	**1,932.87**	**2,027.57**	**2,153.18**	**2,150.06**	**2,084.40**	**0.00**
A. Fuel Combustion (Sectoral Approach)	0.00	258.04	261.01	280.01	281.48	277.01	274.81	283.86	284.88	245.16	0.00
1. Energy Industries		1.72	1.71	1.78	1.72	1.75	1.86	1.87	1.88	2.08	
2. Manufacturing Industries and Construction		1.54	1.51	1.54	1.49	1.58	1.74	1.72	1.73	1.72	
3. Transport		24.87	23.72	23.02	22.99	23.43	23.20	23.81	23.48	25.12	
4. Other Sectors		229.91	234.07	253.67	255.29	250.25	248.01	256.46	257.80	216.25	
5. Other											
B. Fugitive Emissions from Fuels	0.00	1,337.88	1,404.78	1,511.19	1,572.98	1,655.86	1,752.76	1,869.32	1,865.17	1,839.23	0.00
1. Solid Fuels		91.16	99.35	87.35	87.32	84.09	81.58	84.13	78.07	64.95	
2. Oil and Natural Gas		1,246.72	1,305.43	1,423.84	1,485.66	1,571.77	1,671.19	1,785.19	1,787.10	1,774.28	
2. Industrial Processes	**0.00**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**0.00**
A. Mineral Products											
B. Chemical Industry											
C. Metal Production											
D. Other Production											
E. Production of Halocarbons and SF_6											
F. Consumption of Halocarbons and SF_6											
G. Other											
3. Solvent and Other Product Use		**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	
4. Agriculture	**0.00**	**980.44**	**987.53**	**972.08**	**1,016.03**	**1,064.59**	**1,099.31**	**1,107.70**	**1,110.69**	**1,097.32**	**0.00**
A. Enteric Fermentation		761.62	769.02	759.54	795.47	833.69	860.89	866.50	874.84	855.42	
B. Manure Management		218.82	218.51	212.54	220.56	230.90	238.42	241.20	235.84	241.89	
C. Rice Cultivation		NO	NO	NO	NO	NO	NO	NO	NO	NO	
D. Agricultural Soils		NA	NA	NA	NA	NA	NA	NA	NA	NA	
E. Prescribed Burning of Savannas		NO	NO	NO	NO	NO	NO	NO	NO	NO	
F. Field Burning of Agricultural Residues		NO	NO	NO	NO	NO	NO	NO	NO	NO	
G. Other											
5. Land-Use Change and Forestry	**0.00**	**65.70**	**86.10**	**75.50**	**72.60**	**37.10**	**47.40**	**41.70**	**41.70**	**41.70**	**0.00**
A. Changes in Forest and Other Woody Biomass Stocks		NA	NA	NA	NA	NA	NA	NA	NA	NA	
B. Forest and Grassland Conversion		NA	NA	NA	NA	NA	NA	NA	NA	NA	
C. Abandonment of Managed Lands		NA	NA	NA	NA	NA	NA	NA	NA	NA	
D. CO_2 Emissions and Removals from Soil		NA	NA	NA	NA	NA	NA	NA	NA	NA	
E. Other		65.70	86.10	75.50	72.60	37.10	47.40	41.70	41.70	41.70	
6. Waste	**0.00**	**899.67**	**929.49**	**950.04**	**972.97**	**983.88**	**988.29**	**991.61**	**1,014.87**	**1,037.52**	**0.00**
A. Solid Waste Disposal on Land		882.25	911.85	932.11	954.96	965.67	969.80	972.90	995.95	1,018.43	
B. Waste-water Handling		16.98	17.19	17.45	17.70	17.90	18.14	18.37	18.59	18.76	
C. Waste Incineration		0.44	0.45	0.49	0.31	0.31	0.34	0.33	0.33	0.33	
D. Other											
7. Other *(please specify)*	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Memo Items:											
International Bunkers	**0.00**	**0.15**	**0.13**	**0.13**	**0.12**	**0.13**	**0.14**	**0.15**	**0.14**	**0.14**	**0.00**
Aviation		0.08	0.07	0.08	0.07	0.07	0.08	0.09	0.09	0.09	
Marine		0.07	0.06	0.05	0.05	0.05	0.06	0.06	0.05	0.05	
Multilateral Operations											
CO_2 Emissions from Biomass											

TABLE 10 EMISSIONS TRENDS (N_2O)
(Sheet 3 of 5)

Canada
1990
Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Base year[1]	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
	(Gg)										
Total Emissions	**0.00**	**202.56**	**202.01**	**202.11**	**206.93**	**220.47**	**223.05**	**231.45**	**225.89**	**209.33**	**0.00**
1. Energy	**0.00**	**27.96**	**28.44**	**30.61**	**32.61**	**35.13**	**36.24**	**36.32**	**36.81**	**35.94**	**0.00**
A. Fuel Combustion (Sectoral Approach)	0.00	27.96	28.44	30.61	32.61	35.13	36.24	36.32	36.81	35.94	0.00
1. Energy Industries		2.58	2.63	2.74	2.60	2.72	2.82	2.85	2.99	3.22	
2. Manufacturing Industries and Construction		1.43	1.45	1.46	1.38	1.44	1.62	1.55	1.57	1.62	
3. Transport		20.77	21.14	22.93	25.10	27.50	28.35	28.33	28.66	28.08	
4. Other Sectors		3.18	3.23	3.48	3.52	3.46	3.45	3.59	3.58	3.03	
5. Other											
B. Fugitive Emissions from Fuels	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1. Solid Fuels		NA	NA	NA	NA	NA	NA	NA	NA	NA	
2. Oil and Natural Gas		NA	NA	NA	NA	NA	NA	NA	NA	NA	
2. Industrial Processes	**0.00**	**37.08**	**34.73**	**34.60**	**31.80**	**37.85**	**37.12**	**39.56**	**34.43**	**18.83**	**0.00**
A. Mineral Products		NA	NA	NA	NA	NA	NA	NA	NA	NA	
B. Chemical Industry		37.08	34.73	34.60	31.80	37.85	37.12	39.56	34.43	18.83	
C. Metal Production		NA	NA	NA	NA	NA	NA	NA	NA	NA	
D. Other Production											
E. Production of Halocarbons and SF_6											
F. Consumption of Halocarbons and SF_6											
G. Other											
3. Solvent and Other Product Use		**1.35**	**1.37**	**1.39**	**1.41**	**1.42**	**1.44**	**1.46**	**1.47**	**1.47**	
4. Agriculture	**0.00**	**129.69**	**129.96**	**128.25**	**133.82**	**140.54**	**141.57**	**148.10**	**147.14**	**147.04**	**0.00**
A. Enteric Fermentation		NA	NA	NA	NA	NA	NA	NA	NA	NA	
B. Manure Management		13.69	13.91	14.16	14.57	15.45	15.96	16.20	16.50	16.26	
C. Rice Cultivation		NO	NO	NO	NO	NO	NO	NO	NO	NO	
D. Agricultural Soils		116.00	116.04	114.08	119.25	125.09	125.61	131.91	130.64	130.78	
E. Prescribed Burning of Savannas		NO	NO	NO	NO	NO	NO	NO	NO	NO	
F. Field Burning of Agricultural Residues		NO	NO	NO	NO	NO	NO	NO	NO	NO	
G. Other											
5. Land-Use Change and Forestry	**0.00**	**3.50**	**4.50**	**4.20**	**4.20**	**2.40**	**3.50**	**2.80**	**2.80**	**2.80**	**0.00**
A. Changes in Forest and Other Woody Biomass Stocks		NA	NA	NA	NA	NA	NA	NA	NA	NA	
B. Forest and Grassland Conversion		NA	NA	NA	NA	NA	NA	NA	NA	NA	
C. Abandonment of Managed Lands		NA	NA	NA	NA	NA	NA	NA	NA	NA	
D. CO_2 Emissions and Removals from Soil		NA	NA	NA	NA	NA	NA	NA	NA	NA	
E. Other		3.50	4.50	4.20	4.20	2.40	3.50	2.80	2.80	2.80	
6. Waste	**0.00**	**2.98**	**3.01**	**3.06**	**3.10**	**3.14**	**3.17**	**3.21**	**3.25**	**3.25**	**0.00**
A. Solid Waste Disposal on Land		NA	NA	NA	NA	NA	NA	NA	NA	NA	
B. Waste-water Handling		2.81	2.84	2.88	2.92	2.95	2.99	3.03	3.06	3.06	
C. Waste Incineration		0.17	0.17	0.18	0.18	0.18	0.18	0.19	0.19	0.19	
D. Other											
7. Other *(please specify)*	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Memo Items:											
International Bunkers	**0.00**	**0.70**	**0.70**	**0.73**	**0.66**	**0.71**	**0.74**	**1.90**	**1.90**	**0.83**	**0.00**
Aviation		0.27	0.24	0.26	0.24	0.24	0.26	1.14	1.14	0.28	
Marine		0.44	0.45	0.46	0.41	0.47	0.48	0.76	0.76	0.55	
Multilateral Operations											
CO_2 Emissions from Biomass											

TABLE 10 EMISSION TRENDS (HFCs, PFCs and SF_6)
(Sheet 4 of 5)

Canada
1990
Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Base year[1]	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
	(Gg)										
Emissions of HFCs[5] - CO_2 equivalent (Gg)	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**479.41**	**885.95**	**864.07**	**864.07**	**0.00**
HFC-23							0.00	0.00	0.00	0.00	
HFC-32							0.00	0.00	0.00	0.00	
HFC-41								0.00	0.00	0.00	
HFC-43-10mee								0.00	0.00	0.00	
HFC-125							0.02	0.03	0.05	0.05	
HFC-134								0.00	0.00	0.00	
HFC-134a							0.28	0.54	0.41	0.41	
HFC-152a							0.00	0.02	0.04	0.04	
HFC-143								0.00	0.00	0.00	
HFC-143a							0.01	0.02	0.04	0.04	
HFC-227ea							0.01	0.01	0.00	0.00	
HFC-236fa								0.00	0.00	0.00	
HFC-245ca								0.00	0.00	0.00	
Emissions of PFCs[5] - CO_2 equivalent (Gg)	**0.00**	**5,975.11**	**6,318.31**	**6,600.45**	**7,399.29**	**6,912.47**	**6,015.90**	**5,878.68**	**5,962.64**	**6,023.16**	**0.00**
CF_4		0.81	0.87	0.90	1.02	0.95	0.83	0.81	0.82	0.83	
C_2F_6		0.07	0.08	0.08	0.09	0.08	0.07	0.07	0.07	0.07	
C_3F_8											
C_4F_{10}											
c-C_4F_8											
C_5F_{12}											
C_6F_{14}											
Emissions of SF_6[5] - CO_2 equivalent (Gg)	**0.00**	**2,870.39**	**3,260.37**	**2,172.51**	**2,009.99**	**2,037.00**	**1,879.26**	**1,362.30**	**1,390.19**	**1,536.21**	**0.00**
SF_6		0.12	0.14	0.09	0.08	0.09	0.08	0.06	0.06	0.06	

Chemical	GWP
HFCs	
HFC-23	11700
HFC-32	650
HFC-41	150
HFC-43-10mee	1300
HFC-125	2800
HFC-134	1000
HFC-134a	1300
HFC-152a	140
HFC-143	300
HFC-143a	3800
HFC-227ea	2900
HFC-236fa	6300
HFC-245ca	560
PFCs	
CF_4	6500
C_2F_6	9200
C_3F_8	7000
C_4F_{10}	7000
c-C_4F_8	8700
C_5F_{12}	7500
C_6F_{14}	7400
SF_6	23900

[5] Enter information on the actual emissions. Where estimates are only available for the potential emissions, specify this in a comment to the corresponding cell. Only in this row the emissions are expressed as CO_2 equivalent emissions in order to facilitate data flow among spreadsheets.

TABLE 10 EMISSION TRENDS (SUMMARY)
(Sheet 5 of 5)

Canada
1990
Submission 2000

GREENHOUSE GAS EMISSIONS	Base year[1]	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
	CO_2 equivalent (Gg)										
Net CO_2 emissions/removals	0.00	426,614.35	399,099.71	424,187.10	433,459.92	452,330.20	472,712.28	477,668.84	494,751.19	507,597.87	0.00
CO_2 emissions (without LUCF) [6]	0.00	465,755.39	456,369.09	469,538.64	468,038.53	482,059.00	493,840.82	506,554.60	518,376.10	529,430.87	0.00
CH_4	0.00	74,376.36	77,047.14	79,565.43	82,237.17	84,387.15	87,413.90	90,177.77	90,663.53	89,479.55	0.00
N_2O	0.00	62,792.66	62,623.36	62,653.72	64,149.03	68,346.41	69,144.45	71,749.44	70,025.77	64,893.77	0.00
HFCs	0.00	0.00	0.00	0.00	0.00	0.00	479.41	885.95	864.07	864.07	0.00
PFCs	0.00	5,975.11	6,318.31	6,600.45	7,399.29	6,912.47	6,015.90	5,878.68	5,962.64	6,023.16	0.00
SF_6	0.00	2,870.39	3,260.37	2,172.51	2,009.99	2,037.00	1,879.26	1,362.30	1,390.19	1,536.21	0.00
Total (with net CO_2 emissions/removals)	**0.00**	**572,628.87**	**548,348.89**	**575,179.21**	**589,255.40**	**614,013.23**	**637,645.20**	**647,722.99**	**663,657.40**	**670,394.64**	**0.00**
Total (without CO_2 from LUCF) [6]	**0.00**	**611,769.91**	**605,618.27**	**620,530.75**	**623,834.02**	**643,742.03**	**658,773.75**	**676,608.75**	**687,282.30**	**692,227.64**	**0.00**

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Base year[1]	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
	CO_2 equivalent (Gg)										
1. Energy	0.00	467,703.30	459,751.87	477,484.45	477,276.88	493,260.97	507,751.30	522,906.63	535,012.43	545,128.31	0.00
2. Industrial Processes	0.00	53,065.08	53,853.20	52,621.26	54,152.53	56,469.05	56,347.30	58,455.04	57,288.04	52,325.27	0.00
3. Solvent and Other Product Use	0.00	418.69	423.65	430.02	436.02	440.65	446.05	451.43	456.30	456.96	0.00
4. Agriculture	0.00	68,048.49	67,676.37	65,947.70	67,483.29	70,146.89	70,139.17	70,957.82	70,186.08	69,501.29	0.00
5. Land-Use Change and Forestry [7]	0.00	-36,676.34	-54,066.28	-42,464.03	-31,752.01	-28,205.70	-19,048.14	-27,142.06	-21,881.21	-20,089.30	0.00
6. Waste	0.00	20,069.64	20,710.08	21,159.82	21,658.69	21,901.38	22,009.52	22,094.13	22,595.76	23,072.11	0.00
7. Other	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

[6] The information in these rows is requested to facilitate comparison of data, since Parties differ in the way they report CO_2 emissions and removals from Land-Use Change and Forestry.
[7] Net emissions.

TABLE 11 CHECK LIST OF REPORTED INVENTORY INFORMATION[1]

Party: Canada **Year:** 1990

Contact info:	Focal point for national GHG inventories:	Environment Canada (Art Jaques)		
	Address:	351 St Joseph Blvd, Hull QC		
	Telephone:	(819) 9943098	Fax: (819) 953 9542	E-mail: Art.jaques@ec.gc.ca
	Main institution preparing the inventory:	Environment Canada (Art Jaques)		

General info:	Date of submission:			
	Base years:	1990	PFCs, HFCs, SF_6:	
	Year covered in the submission:	1990-1998		
	Gases covered:	CO_2, CH_4, N_2O, PFC's, HFC's, & SF_6		
	Omissions in geographic coverage:	None		

		Energy	Ind. Processes	Solvent Use	LUCF	Agriculture	Waste
Tables:	Sectoral report tables:	☑	☑	☑	☑	☑	☑
	Sectoral background data tables:	☑	☑	☑	☑	☑	☑
	Summary 1 (IPCC Summary tables):	IPCC Table 7A:		☑	IPCC Table 7B:		☑
	Summary 2 (CO_2 equivalent emissions):			☑			
	Summary 3 (Methods/Emission factors):			☑			
	Uncertainty:	IPCC Table 8A:		☑	National information:		☑
	Recalculation tables:			☑			
	Completeness table:			☑			
	Trend table:			☑			

CO_2	Comparison of CO_2 from fuel combustion:	Worksheet 1-1	Percentage of difference	Explanation of differences
		☑	9.21	☑

		Energy	Ind.Processes	Solvent Use	LUCF	Agriculture	Waste
Recalculation:	CO_2	☑	☑	☐	☐	☐	☐
	CH_4	☑	☐	☐	☐	☑	☐
	N_2O	☑	☐	☐	☐	☑	☐
	HFCs, PFCs, SF_6		☐				
	Explanations:	☑	☑	☐	☐	☑	☐
	Recalculation tables for all recalculated years:			☑			
	Full CRF for the recalculated base year:			☑			

		HFCs		PFCs		SF_6	
HFCs, PFCs, SF_6:	Disaggregation by species:	☐		☑			
	Production of Halocarbons/SF_6:	☐		☐		☐	
	Consumption of Halocarbons/SF_6:	Actual	Potential	Actual	Potential	Actual	Potential
		☐	☐	☑	☐	☑	☐
	Potential/Actual emission ratio:	0.00		0.00		0.00	

	Reference to National Inventory Report and/or national inventory web site:	Inventory report attached.

CRF - Common Reporting Format.
LUCF - Land-Use Change and Forestry.

[1] For each omission, give an explanation for the reasons by inserting a comment to the corresponding cell.

Appendix 2c

Recalculation Tables – 1991 to 1997

Recalculation Tables 1991

TABLE 8(a) RECALCULATION - RECALCULATED DATA

Recalculated year: 1991

(Sheet 1 of 2)

Canada
1991
Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		CO_2			CH_4			N_2O		
		Previous submission	Latest submission	Difference[1]	Previous submission	Latest submission	Difference[1]	Previous submission	Latest submission	Difference[1]
		CO_2 equivalent (Gg)		(%)	CO_2 equivalent (Gg)		(%)	CO_2 equivalent (Gg)		(%)
Total National Emissions and Removals		**461,687.27**	**466,242.74**	**0.99**	**76,480.10**	**77,047.14**	**0.74**	**56,912.64**	**62,623.36**	**10.03**
1. Energy		**411,355.22**	**415,952.43**	**1.12**	**34,987.16**	**34,981.62**	**-0.02**	**8,996.01**	**8,817.81**	**-1.98**
1.A.	Fuel Combustion Activities	401,240.90	405,838.12	1.15	5,486.74	5,481.21	-0.10	8,996.01	8,817.81	-1.98
1.A.1.	Energy Industries	140,114.28	143,299.33	2.27	32.96	35.89	8.90	844.41	814.47	-3.55
1.A.2.	Manufacturing Industries and Construction	51,426.45	53,333.11	3.71	33.84	31.75	-6.18	503.11	448.02	-10.95
1.A.3.	Transport	141,851.73	140,611.09	-0.87	504.68	498.02	-1.32	6,636.36	6,554.46	-1.23
1.A.4.	Other Sectors	67,848.44	68,594.59	1.10	4,915.27	4,915.55	0.01	1,012.13	1,000.86	-1.11
1.A.5.	Other									
1.B.	Fugitive Emissions from Fuels									
1.B.1.	Solid fuel									
1.B.2.	Oil and Natural Gas									
2. Industrial Processes		**33,549.76**	**33,508.01**	**-0.12**						
2.A.	Mineral Products									
2.B.	Chemical Industry									
2.C.	Metal Production									
2.D.	Other Production									
2.G.	Other	11,432.24	11,390.49	-0.37						
3. Solvent and Other Product Use										
4. Agriculture					**20,165.50**	**20,738.07**	**2.84**	**34,397.39**	**40,286.30**	**17.12**
4.A.	Enteric Fermentation									
4.B.	Manure Management				4,016.04	4,588.61	14.26	3,945.62	4,312.66	9.30
4.C.	Rice Cultivation									
4.D.	Agricultural Soils [2]							30,451.77	35,973.64	18.13
4.E.	Prescribed Burning of Savannas									
4.F.	Field Burning of Agricultural Residues									
4.G.	Other									
5. Land-Use Change and Forestry (net)										
5.A.	Changes in Forest and Other Woody Biomass Stocks									
5.B.	Forest and Grassland Conversion									
5.C.	Abandonment of Managed Lands									
5.D.	CO_2 Emissions and Removals from Soil									
5.E.	Other									

[1] Estimate the percentage change due to recalculation with respect to the previous submission (Percentage change = 100% x [(LS-PS)/PS], where LS = Latest submission and PS = Previous submission.
All cases of recalculation of the estimate of the source/sink category, should be addressed and explained in Table 8(b) of this common reporting format.

[2] See footnote 4 to Summary 1.A of this common reporting format.

TABLE 8(a) RECALCULATION - RECALCULATED DATA
Recalculated year: 1991
(Sheet 2 of 2)

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		CO_2			CH_4			N_2O		
		Previous submission	Latest submission	Difference[1]	Previous submission	Latest submission	Difference[1]	Previous submission	Latest submission	Difference[1]
		CO_2 equivalent (Gg)		(%)	CO_2 equivalent (Gg)		(%)	CO_2 equivalent (Gg)		(%)
6. Waste										
6.A.	Solid Waste Disposal on Land									
6.B.	Wastewater Handling									
6.C.	Waste Incineration									
6.D.	Other									
7. Other *(please specify)*										
Memo Items:										
International Bunkers		**4,607.06**	**5,581.22**	**21.14**	**2.50**	**2.81**	**12.18**	**171.87**	**215.48**	**25.37**
Multilateral Operations										
CO_2 Emissions from Biomass		**74,498.89**	**59,959.51**	**-19.52**						

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		HFCs			PFCs			SF_6		
		Previous submission	Latest submission	Difference[1]	Previous submission	Latest submission	Difference[1]	Previous submission	Latest submission	Difference[1]
		CO_2 equivalent (Gg)		(%)	CO_2 equivalent (Gg)		(%)	CO_2 equivalent (Gg)		(%)
Total Actual Emissions										
2.C.3.	Aluminium Production									
2.E.	Production of Halocarbons and SF_6									
2.F.	Consumption of Halocarbons and SF_6									
	Other									
Potential Emissions from Consumption of HFCs/PFCs and SF_6										

	Previous submission	Latest submission	Difference[1]
	CO_2 equivalent (Gg)		(%)
Total CO_2 Equivalent Emissions with Land-Use Change and Forestry [3]	604,658.68	615,491.92	1.79
Total CO_2 Equivalent Emissions without Land-Use Change and Forestry [3]	594,785.03	605,618.27	1.82

[3] The information in these rows is requested to facilitate comparison of data, since Parties differ in the way they report emissions and removals from Land-Use Change and Forestry.

TABLE 8(b) RECALCULATION - EXPLANATORY INFORMATION
(Sheet 1 of 1)

Canada
1991
Submission 2000

Specify the sector and source/sink category[1] where changes in estimates have occurred:		GHG	RECALCULATION DUE TO			
			CHANGES IN:			Addition/removal/ replacement of source/sink categories
			Methods [2]	Emission factors [2]	Activity data [2]	
1.A.1	Energy Industries	CO2, CH4 & N2O	NA	NA	Revised Energy Data	
1.A.2	Manufacturing Industries and Construction	CO2, CH4 & N2O	NA	NA	Revised Energy Data	
1.A.3	Transport	CO2, CH4 & N2O	NA	NA	Revised Energy Data	
1.A.4	Other Sectors	CO2, CH4 & N2O	NA	NA	Revised Energy Data	
1.A.5	Other	CO2, CH4 & N2O	NA	NA	Revised Energy Data	
2.G	Other	CO2	NA	NA	Revised Energy Data	
4.A	Enteric Fermentation	CH4	NA	NA	Revised Animal Population Data	
4.B	Manure Management	CH4 & N2O	NA	NA	Revised Animal Population Data	
4.D	Agriucltural Soil	N2O	NA	New Emission Factor - IPCC EF	New Cultivated Organic Soil Data	
Memo It	International Bunkers	CO2, CH4 & N2O	NA	NA	Revised Energy Data	
Memo It	CO2 Emissions from Biomass	CO2	Double Counting	NA	NA	

[1] Enter the identification code of the source/sink category (e.g. 1.B.1) in the first column and the name of the category (e.g. Fugitive Emissions from Solid Fuels) in the second column of the table (see Table 8(a)) .

[2] Explain changes in methods, emission factors and activity data that have resulted in recalculation of the estimate of the source/sink as indicated in Table 8(a). Include relevant changes in the assumptions and coefficients under the "Methods" column.

Documentation box: Use the documentation box to report the justifications of the changes as to improvements in the accuracy, completeness and consistency of the inventory.

Recalculation Tables 1992

TABLE 8(a) RECALCULATION - RECALCULATED DATA

Recalculated year: 1992

(Sheet 1 of 2)

Canada
1992
Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		CO_2			CH_4			N_2O		
		Previous submission	Latest submission	Difference[1]	Previous submission	Latest submission	Difference[1]	Previous submission	Latest submission	Difference[1]
		CO_2 equivalent (Gg)		(%)	CO_2 equivalent (Gg)		(%)	CO_2 equivalent (Gg)		(%)
Total National Emissions and Removals		**476,613.38**	**480,424.70**	**0.80**	**78,996.78**	**79,565.43**	**0.72**	**56,944.95**	**62,653.72**	**10.03**
1. Energy		**425,639.38**	**430,379.55**	**1.11**	**37,615.20**	**37,615.27**	**0.00**	**9,656.77**	**9,489.64**	**-1.73**
1.A.	Fuel Combustion Activities	414,989.92	419,730.09	1.14	5,880.21	5,880.27	0.00	9,656.77	9,489.64	-1.73
1.A.1.	Energy Industries	148,504.20	151,415.25	1.96	34.07	37.36	9.66	880.51	849.19	-3.56
1.A.2.	Manufacturing Industries and Construction	50,746.06	52,790.00	4.03	34.07	32.35	-5.04	507.46	452.10	-10.91
1.A.3.	Transport	145,491.61	144,669.11	-0.57	485.21	483.52	-0.35	7,178.79	7,108.24	-0.98
1.A.4.	Other Sectors	70,248.06	70,855.72	0.87	5,326.86	5,327.04	0.00	1,090.00	1,080.10	-0.91
1.A.5.	Other									
1.B.	Fugitive Emissions from Fuels									
1.B.1.	Solid fuel									
1.B.2.	Oil and Natural Gas									
2. Industrial Processes		**34,050.20**	**33,121.36**	**-2.73**						
2.A.	Mineral Products									
2.B.	Chemical Industry									
2.C.	Metal Production									
2.D.	Other Production									
2.G.	Other	11,800.12	10,871.28	-7.87						
3. Solvent and Other Product Use										
4. Agriculture					**19,845.15**	**20,413.72**	**2.87**	**33,881.08**	**39,756.98**	**17.34**
4.A.	Enteric Fermentation									
4.B.	Manure Management				3,894.84	4,463.42	14.60	4,026.20	4,390.69	9.05
4.C.	Rice Cultivation									
4.D.	Agricultural Soils [2]							29,854.88	35,366.29	18.46
4.E.	Prescribed Burning of Savannas									
4.F.	Field Burning of Agricultural Residues									
4.G.	Other									
5. Land-Use Change and Forestry (net)										
5.A.	Changes in Forest and Other Woody Biomass Stocks									
5.B.	Forest and Grassland Conversion									
5.C.	Abandonment of Managed Lands									
5.D.	CO_2 Emissions and Removals from Soil									
5.E.	Other									

[1] Estimate the percentage change due to recalculation with respect to the previous submission (Percentage change = 100% x [(LS-PS)/PS], where LS = Latest submission and PS = Previous submission.
All cases of recalculation of the estimate of the source/sink category, should be addressed and explained in Table 8(b) of this common reporting format.

[2] See footnote 4 to Summary 1.A of this common reporting format.

TABLE 8(a) RECALCULATION - RECALCULATED DATA
Recalculated year: 1992
(Sheet 2 of 2)

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		CO_2			CH_4			N_2O		
		Previous submission	Latest submission	Difference[1]	Previous submission	Latest submission	Difference[1]	Previous submission	Latest submission	Difference[1]
		CO_2 equivalent (Gg)		(%)	CO_2 equivalent (Gg)		(%)	CO_2 equivalent (Gg)		(%)
6. Waste										
6.A.	Solid Waste Disposal on Land									
6.B.	Wastewater Handling									
6.C.	Waste Incineration									
6.D.	Other									
7. Other *(please specify)*										
Memo Items:										
International Bunkers		**4,635.06**	**5,865.96**	**26.56**	**2.35**	**2.83**	**20.48**	**169.73**	**225.39**	**32.79**
Multilateral Operations										
CO_2 Emissions from Biomass		**73,473.92**	**62,226.56**	**-15.31**						

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		HFCs			PFCs			SF_6		
		Previous submission	Latest submission	Difference[1]	Previous submission	Latest submission	Difference[1]	Previous submission	Latest submission	Difference[1]
		CO_2 equivalent (Gg)		(%)	CO_2 equivalent (Gg)		(%)	CO_2 equivalent (Gg)		(%)
Total Actual Emissions										
2.C.3.	Aluminium Production									
2.E.	Production of Halocarbons and SF_6									
2.F.	Consumption of Halocarbons and SF_6									
	Other									
Potential Emissions from Consumption of HFCs/PFCs and SF_6										

	Previous submission	Latest submission	Difference[1]
	CO_2 equivalent (Gg)		(%)
Total CO_2 Equivalent Emissions with Land-Use Change and Forestry [3]	621,328.08	631,416.81	1.62
Total CO_2 Equivalent Emissions without Land-Use Change and Forestry [3]	610,442.01	620,530.75	1.65

[3] The information in these rows is requested to facilitate comparison of data, since Parties differ in the way they report emissions and removals from Land-Use Change and Forestry.

TABLE 8(b) RECALCULATION - EXPLANATORY INFORMATION
(Sheet 1 of 1)

Canada
1992
Submission 2000

Specify the sector and source/sink category[1] where changes in estimates have occurred:		GHG	RECALCULATION DUE TO			
			CHANGES IN:			Addition/removal/ replacement of source/sink categories
			Methods [2]	Emission factors [2]	Activity data [2]	
1.A.1	Energy Industries	CO2, CH4 & N2O	NA	NA	Revised Energy Data	
1.A.2	Manufacturing Industries and Construction	CO2, CH4 & N2O	NA	NA	Revised Energy Data	
1.A.3	Transport	CO2, CH4 & N2O	NA	NA	Revised Energy Data	
1.A.4	Other Sectors	CO2, CH4 & N2O	NA	NA	Revised Energy Data	
1.A.5	Other	CO2, CH4 & N2O	NA	NA	Revised Energy Data	
2.G	Other	CO2	NA	NA	Revised Energy Data	
4.A	Enteric Fermentation	CH4	NA	NA	Revised Animal Population Data	
4.B	Manure Management	CH4 & N2O	NA	NA	Revised Animal Population Data	
4.D	Agriucltural Soil	N2O	NA	New Emission Factor - IPCC EF	New Cultivated Organic Soil Data	
Memo It	International Bunkers	CO2, CH4 & N2O	NA	NA	Revised Energy Data	
Memo It	CO2 Emissions from Biomass	CO2	Double Counting	NA	NA	

[1] Enter the identification code of the source/sink category (e.g. 1.B.1) in the first column and the name of the category (e.g. Fugitive Emissions from Solid Fuels) in the second column of the table (see Table 8(a)) .

[2] Explain changes in methods, emission factors and activity data that have resulted in recalculation of the estimate of the source/sink as indicated in Table 8(a). Include relevant changes in the assumptions and coefficients under the "Methods" column.

Documentation box: Use the documentation box to report the justifications of the changes as to improvements in the accuracy, completeness and consistency of the inventory.

Recalculation Tables 1993

TABLE 8(a) RECALCULATION - RECALCULATED DATA

Recalculated year: 1993

(Sheet 1 of 2)

Canada
1993
Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		CO_2			CH_4			N_2O		
		Previous submission	Latest submission	Difference[1]	Previous submission	Latest submission	Difference[1]	Previous submission	Latest submission	Difference[1]
		CO_2 equivalent (Gg)		(%)	CO_2 equivalent (Gg)		(%)	CO_2 equivalent (Gg)		(%)
Total National Emissions and Removals		**478,960.84**	**479,762.60**	**0.17**	**81,649.25**	**82,237.17**	**0.72**	**58,338.98**	**64,149.03**	**9.96**
1. Energy		**426,089.06**	**428,225.48**	**0.50**	**38,952.85**	**38,943.65**	**-0.02**	**10,266.64**	**10,107.75**	**-1.55**
1.A.	Fuel Combustion Activities	414,757.00	416,893.42	0.52	5,920.31	5,911.11	-0.16	10,266.64	10,107.75	-1.55
1.A.1.	Energy Industries	141,864.96	145,493.99	2.56	32.59	36.03	10.56	838.97	806.61	-3.86
1.A.2.	Manufacturing Industries and Construction	49,323.80	49,961.07	1.29	33.62	31.31	-6.86	489.14	428.63	-12.37
1.A.3.	Transport	148,824.92	147,814.16	-0.68	492.68	482.76	-2.01	7,826.51	7,780.27	-0.59
1.A.4.	Other Sectors	74,743.33	73,624.20	-1.50	5,361.42	5,361.01	-0.01	1,112.03	1,092.25	-1.78
1.A.5.	Other									
1.B.	Fugitive Emissions from Fuels									
1.B.1.	Solid fuel									
1.B.2.	Oil and Natural Gas									
2. Industrial Processes		**36,220.93**	**34,886.29**	**-3.68**						
2.A.	Mineral Products									
2.B.	Chemical Industry									
2.C.	Metal Production									
2.D.	Other Production									
2.G.	Other	13,255.49	11,920.84	-10.07						
3. Solvent and Other Product Use										
4. Agriculture					**20,739.53**	**21,336.64**	**2.88**	**35,515.71**	**41,484.65**	**16.81**
4.A.	Enteric Fermentation									
4.B.	Manure Management				4,034.68	4,631.79	14.80	4,135.05	4,517.82	9.26
4.C.	Rice Cultivation									
4.D.	Agricultural Soils [2]							31,380.66	36,966.83	17.80
4.E.	Prescribed Burning of Savannas									
4.F.	Field Burning of Agricultural Residues									
4.G.	Other									
5. Land-Use Change and Forestry (net)										
5.A.	Changes in Forest and Other Woody Biomass Stocks									
5.B.	Forest and Grassland Conversion									
5.C.	Abandonment of Managed Lands									
5.D.	CO_2 Emissions and Removals from Soil									
5.E.	Other									

[1] Estimate the percentage change due to recalculation with respect to the previous submission (Percentage change = 100% x [(LS-PS)/PS], where LS = Latest submission and PS = Previous submission.
All cases of recalculation of the estimate of the source/sink category, should be addressed and explained in Table 8(b) of this common reporting format.

[2] See footnote 4 to Summary 1.A of this common reporting format.

TABLE 8(a) RECALCULATION - RECALCULATED DATA
Recalculated year: 1993
(Sheet 2 of 2)

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		CO_2			CH_4			N_2O		
		Previous submission	Latest submission	Difference[1]	Previous submission	Latest submission	Difference[1]	Previous submission	Latest submission	Difference[1]
		CO_2 equivalent (Gg)		(%)	CO_2 equivalent (Gg)		(%)	CO_2 equivalent (Gg)		(%)
6. Waste										
6.A.	Solid Waste Disposal on Land									
6.B.	Wastewater Handling									
6.C.	Waste Incineration									
6.D.	Other									
7. Other *(please specify)*										
Memo Items:										
International Bunkers		**4,288.79**	**5,310.23**	**23.82**	**2.11**	**2.62**	**23.78**	**157.78**	**203.37**	**28.90**
Multilateral Operations										
CO_2 Emissions from Biomass		**71,271.15**	**61,105.73**	**-14.26**						

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		HFCs			PFCs			SF_6		
		Previous submission	Latest submission	Difference[1]	Previous submission	Latest submission	Difference[1]	Previous submission	Latest submission	Difference[1]
		CO_2 equivalent (Gg)		(%)	CO_2 equivalent (Gg)		(%)	CO_2 equivalent (Gg)		(%)
Total Actual Emissions										
2.C.3.	Aluminium Production									
2.E.	Production of Halocarbons and SF_6									
2.F.	Consumption of Halocarbons and SF_6									
	Other									
Potential Emissions from Consumption of HFCs/PFCs and SF_6										

	Previous submission	Latest submission	Difference[1]
	CO_2 equivalent (Gg)		(%)
Total CO_2 Equivalent Emissions with Land-Use Change and Forestry [3]	628,358.35	635,558.09	1.15
Total CO_2 Equivalent Emissions without Land-Use Change and Forestry [3]	616,634.28	623,834.02	1.17

[3] The information in these rows is requested to facilitate comparison of data, since Parties differ in the way they report emissions and removals from Land-Use Change and Forestry.

TABLE 8(b) RECALCULATION - EXPLANATORY INFORMATION
(Sheet 1 of 1)

Canada
1993
Submission 2000

Specify the sector and source/sink category[1] where changes in estimates have occurred:		GHG	RECALCULATION DUE TO			
			CHANGES IN:			Addition/removal/ replacement of source/sink categories
			Methods [2]	Emission factors [2]	Activity data [2]	
1.A.1	Energy Industries	CO2, CH4 & N2O	NA	NA	Revised Energy Data	
1.A.2	Manufacturing Industries and Construction	CO2, CH4 & N2O	NA	NA	Revised Energy Data	
1.A.3	Transport	CO2, CH4 & N2O	NA	NA	Revised Energy Data	
1.A.4	Other Sectors	CO2, CH4 & N2O	NA	NA	Revised Energy Data	
1.A.5	Other	CO2, CH4 & N2O	NA	NA	Revised Energy Data	
2.G	Other	CO2	NA	NA	Revised Energy Data	
4.A	Enteric Fermentation	CH4	NA	NA	Revised Animal Population Data	
4.B	Manure Management	CH4 & N2O	NA	NA	Revised Animal Population Data	
4.D	Agriucltural Soil	N2O	NA	New Emission Factor - IPCC EF	New Cultivated Organic Soil Data	
Memo It	International Bunkers	CO2, CH4 & N2O	NA	NA	Revised Energy Data	
Memo It	CO2 Emissions from Biomass	CO2	Double Counting	NA	NA	

[1] Enter the identification code of the source/sink category (e.g. 1.B.1) in the first column and the name of the category (e.g. Fugitive Emissions from Solid Fuels) in the second column of the table (see Table 8(a)) .

[2] Explain changes in methods, emission factors and activity data that have resulted in recalculation of the estimate of the source/sink as indicated in Table 8(a). Include relevant changes in the assumptions and coefficients under the "Methods" column.

Documentation box: Use the documentation box to report the justifications of the changes as to improvements in the accuracy, completeness and consistency of the inventory.

Recalculation Tables 1994

TABLE 8(a) RECALCULATION - RECALCULATED DATA

Recalculated year: 1994

(Sheet 1 of 2)

Canada
1994
Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		CO_2			CH_4			N_2O		
		Previous submission	Latest submission	Difference[1]	Previous submission	Latest submission	Difference[1]	Previous submission	Latest submission	Difference[1]
		CO_2 equivalent (Gg)		(%)	CO_2 equivalent (Gg)		(%)	CO_2 equivalent (Gg)		(%)
Total National Emissions and Removals		**486,555.29**	**488,789.93**	**0.46**	**83,751.49**	**84,387.15**	**0.76**	**62,305.68**	**68,346.41**	**9.70**
1. Energy		**439,209.70**	**441,781.36**	**0.59**	**40,627.92**	**40,590.32**	**-0.09**	**11,065.80**	**10,889.29**	**-1.60**
1.A.	Fuel Combustion Activities	427,351.24	429,922.90	0.60	5,854.84	5,817.24	-0.64	11,065.80	10,889.29	-1.60
1.A.1.	Energy Industries	145,583.63	148,410.88	1.94	33.50	36.85	10.02	873.88	843.85	-3.44
1.A.2.	Manufacturing Industries and Construction	50,453.18	53,045.03	5.14	35.19	33.13	-5.85	500.93	446.24	-10.92
1.A.3.	Transport	157,139.48	155,224.21	-1.22	530.68	492.05	-7.28	8,597.01	8,525.91	-0.83
1.A.4.	Other Sectors	74,174.95	73,242.79	-1.26	5,255.47	5,255.21	0.00	1,093.98	1,073.28	-1.89
1.A.5.	Other									
1.B.	Fugitive Emissions from Fuels									
1.B.1.	Solid fuel									
1.B.2.	Oil and Natural Gas									
2. Industrial Processes		**36,122.70**	**35,785.68**	**-0.93**						
2.A.	Mineral Products									
2.B.	Chemical Industry									
2.C.	Metal Production	11,723.13	11,767.27	0.38						
2.D.	Other Production									
2.G.	Other	13,191.80	12,810.64	-2.89						
3. Solvent and Other Product Use										
4. Agriculture					**21,683.04**	**22,356.30**	**3.10**	**37,349.35**	**43,566.59**	**16.65**
4.A.	Enteric Fermentation									
4.B.	Manure Management				4,175.58	4,848.84	16.12	4,357.47	4,789.06	9.90
4.C.	Rice Cultivation									
4.D.	Agricultural Soils [2]							32,991.89	38,777.53	17.54
4.E.	Prescribed Burning of Savannas									
4.F.	Field Burning of Agricultural Residues									
4.G.	Other									
5. Land-Use Change and Forestry (net)										
5.A.	Changes in Forest and Other Woody Biomass Stocks									
5.B.	Forest and Grassland Conversion									
5.C.	Abandonment of Managed Lands									
5.D.	CO_2 Emissions and Removals from Soil									
5.E.	Other									

[1] Estimate the percentage change due to recalculation with respect to the previous submission (Percentage change = 100% x [(LS-PS)/PS], where LS = Latest submission and PS = Previous submission.
All cases of recalculation of the estimate of the source/sink category, should be addressed and explained in Table 8(b) of this common reporting format.

[2] See footnote 4 to Summary 1.A of this common reporting format.

TABLE 8(a) RECALCULATION - RECALCULATED DATA
Recalculated year: 1994
(Sheet 2 of 2)

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		CO_2			CH_4			N_2O		
		Previous submission	Latest submission	Difference[1]	Previous submission	Latest submission	Difference[1]	Previous submission	Latest submission	Difference[1]
		CO_2 equivalent (Gg)		(%)	CO_2 equivalent (Gg)		(%)	CO_2 equivalent (Gg)		(%)
6. Waste										
6.A.	Solid Waste Disposal on Land									
6.B.	Wastewater Handling									
6.C.	Waste Incineration									
6.D.	Other									
7. Other *(please specify)*										
Memo Items:										
International Bunkers		**4,538.95**	**5,649.64**	**24.47**	**2.17**	**2.65**	**22.18**	**168.70**	**218.94**	**29.78**
Multilateral Operations										
CO_2 Emissions from Biomass		**68,407.19**	**64,536.06**	**-5.66**						

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		HFCs			PFCs			SF_6		
		Previous submission	Latest submission	Difference[1]	Previous submission	Latest submission	Difference[1]	Previous submission	Latest submission	Difference[1]
		CO_2 equivalent (Gg)		(%)	CO_2 equivalent (Gg)		(%)	CO_2 equivalent (Gg)		(%)
Total Actual Emissions										
2.C.3.	Aluminium Production									
2.E.	Production of Halocarbons and SF_6									
2.F.	Consumption of Halocarbons and SF_6									
	Other									
Potential Emissions from Consumption of HFCs/PFCs and SF_6										

	Previous submission	Latest submission	Difference[1]
	CO_2 equivalent (Gg)		(%)
Total CO_2 Equivalent Emissions with Land-Use Change and Forestry [3]	641,561.94	650,472.96	1.39
Total CO_2 Equivalent Emissions without Land-Use Change and Forestry [3]	634,831.01	643,742.03	1.40

[3] The information in these rows is requested to facilitate comparison of data, since Parties differ in the way they report emissions and removals from Land-Use Change and Forestry.

TABLE 8(b) RECALCULATION - EXPLANATORY INFORMATION
(Sheet 1 of 1)

Canada
1994
Submission 2000

Specify the sector and source/sink category[1] where changes in estimates have occurred:		GHG	RECALCULATION DUE TO			
			CHANGES IN:			Addition/removal/ replacement of source/sink categories
			Methods [2]	Emission factors [2]	Activity data [2]	
1.A.1	Energy Industries	CO2, CH4 & N2O	NA	NA	Revised Energy Data	
1.A.2	Manufacturing Industries and Construction	CO2, CH4 & N2O	NA	NA	Revised Energy Data	
1.A.3	Transport	CO2, CH4 & N2O	NA	NA	Revised Energy Data	
1.A.4	Other Sectors	CO2, CH4 & N2O	NA	NA	Revised Energy Data	
1.A.5	Other	CO2, CH4 & N2O	NA	NA	Revised Energy Data	
2.C	Metal Production	CO2	NA	NA	Revised Energy Data	
2.G	Other	CO2	NA	NA	Revised Energy Data	
4.A	Enteric Fermentation	CH4	NA	NA	Revised Animal Population Data	
4.B	Manure Management	CH4 & N2O	NA	NA	Revised Animal Population Data	
4.D	Agriucltural Soil	N2O	NA	New Emission Factor - IPCC EF	New Cultivated Organic Soil Data	
Memo It	CO2 Emissions from Biomass	CO2	Double Counting	NA	NA	

[1] Enter the identification code of the source/sink category (e.g. 1.B.1) in the first column and the name of the category (e.g. Fugitive Emissions from Solid Fuels) in the second column of the table (see Table 8(a)) .

[2] Explain changes in methods, emission factors and activity data that have resulted in recalculation of the estimate of the source/sink as indicated in Table 8(a). Include relevant changes in the assumptions and coefficients under the "Methods" column.

Documentation box: Use the documentation box to report the justifications of the changes as to improvements in the accuracy, completeness and consistency of the inventory.

Recalculation Tables 1995

TABLE 8(a) RECALCULATION - RECALCULATED DATA

Recalculated year: 1995

(Sheet 1 of 2)

Canada
1995
Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		CO_2			CH_4			N_2O		
		Previous submission	Latest submission	Difference[1]	Previous submission	Latest submission	Difference[1]	Previous submission	Latest submission	Difference[1]
		CO_2 equivalent (Gg)		(%)	CO_2 equivalent (Gg)		(%)	CO_2 equivalent (Gg)		(%)
Total National Emissions and Removals		**511,274.85**	**510,087.78**	**-0.23**	**86,809.40**	**87,413.90**	**0.70**	**63,179.70**	**69,144.45**	**9.44**
1. Energy		**454,779.45**	**453,938.96**	**-0.18**	**42,648.30**	**42,578.97**	**-0.16**	**11,487.72**	**11,233.37**	**-2.21**
1.A.	Fuel Combustion Activities	441,805.56	440,965.07	-0.19	5,840.27	5,770.94	-1.19	11,487.72	11,233.37	-2.21
1.A.1.	Energy Industries	151,514.41	154,327.58	1.86	34.62	39.04	12.76	896.33	873.45	-2.55
1.A.2.	Manufacturing Industries and Construction	53,937.42	53,482.91	-0.84	40.87	36.52	-10.63	579.91	501.60	-13.50
1.A.3.	Transport	161,905.98	159,440.35	-1.52	556.47	487.27	-12.43	8,921.42	8,788.82	-1.49
1.A.4.	Other Sectors	74,447.76	73,714.23	-0.99	5,208.31	5,208.11	0.00	1,090.05	1,069.50	-1.89
1.A.5.	Other									
1.B.	Fugitive Emissions from Fuels									
1.B.1.	Solid fuel									
1.B.2.	Oil and Natural Gas									
2. Industrial Processes		**36,811.03**	**36,464.45**	**-0.94**						
2.A.	Mineral Products									
2.B.	Chemical Industry									
2.C.	Metal Production	12,043.34	11,984.32	-0.49						
2.D.	Other Production									
2.G.	Other	13,025.05	12,737.49	-2.21						
3. Solvent and Other Product Use										
4. Agriculture					**22,411.60**	**23,085.43**	**3.01**	**37,668.64**	**43,887.74**	**16.51**
4.A.	Enteric Fermentation									
4.B.	Manure Management				4,332.93	5,006.75	15.55	4,515.70	4,947.66	9.57
4.C.	Rice Cultivation									
4.D.	Agricultural Soils [2]							33,152.93	38,940.08	17.46
4.E.	Prescribed Burning of Savannas									
4.F.	Field Burning of Agricultural Residues									
4.G.	Other									
5. Land-Use Change and Forestry (net)										
5.A.	Changes in Forest and Other Woody Biomass Stocks									
5.B.	Forest and Grassland Conversion									
5.C.	Abandonment of Managed Lands									
5.D.	CO_2 Emissions and Removals from Soil									
5.E.	Other									

[1] Estimate the percentage change due to recalculation with respect to the previous submission (Percentage change = 100% x [(LS-PS)/PS], where LS = Latest submission and PS = Previous submission.
All cases of recalculation of the estimate of the source/sink category, should be addressed and explained in Table 8(b) of this common reporting format.

[2] See footnote 4 to Summary 1.A of this common reporting format.

TABLE 8(a) RECALCULATION - RECALCULATED DATA
Recalculated year: 1995
(Sheet 2 of 2)

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		CO_2			CH_4			N_2O		
		Previous submission	Latest submission	Difference[1]	Previous submission	Latest submission	Difference[1]	Previous submission	Latest submission	Difference[1]
		CO_2 equivalent (Gg)		(%)	CO_2 equivalent (Gg)		(%)	CO_2 equivalent (Gg)		(%)
6. Waste										
6.A.	Solid Waste Disposal on Land									
6.B.	Wastewater Handling									
6.C.	Waste Incineration									
6.D.	Other									
7. Other *(please specify)*										
Memo Items:										
International Bunkers		**4,707.94**	**5,915.97**	**25.66**	**2.36**	**2.84**	**20.43**	**174.23**	**228.85**	**31.35**
Multilateral Operations										
CO_2 Emissions from Biomass		**69,718.01**	**66,819.47**	**-4.16**						

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		HFCs			PFCs			SF_6		
		Previous submission	Latest submission	Difference[1]	Previous submission	Latest submission	Difference[1]	Previous submission	Latest submission	Difference[1]
		CO_2 equivalent (Gg)		(%)	CO_2 equivalent (Gg)		(%)	CO_2 equivalent (Gg)		(%)
Total Actual Emissions										
2.C.3.	Aluminium Production									
2.E.	Production of Halocarbons and SF_6									
2.F.	Consumption of Halocarbons and SF_6									
	Other									
Potential Emissions from Consumption of HFCs/PFCs and SF_6										

	Previous submission	Latest submission	Difference[1]
	CO_2 equivalent (Gg)		(%)
Total CO_2 Equivalent Emissions with Land-Use Change and Forestry [3]	669,638.52	675,020.70	0.80
Total CO_2 Equivalent Emissions without Land-Use Change and Forestry [3]	653,391.56	658,773.75	0.82

[3] The information in these rows is requested to facilitate comparison of data, since Parties differ in the way they report emissions and removals from Land-Use Change and Forestry.

TABLE 8(b) RECALCULATION - EXPLANATORY INFORMATION
(Sheet 1 of 1)

Canada
1995
Submission 2000

Specify the sector and source/sink category[1] where changes in estimates have occurred:		GHG	RECALCULATION DUE TO			
			CHANGES IN:			Addition/removal/ replacement of source/sink categories
			Methods [2]	Emission factors [2]	Activity data [2]	
1.A.1	Energy Industries	CO2, CH4 & N2O	NA	NA	Revised Energy Data	
1.A.2	Manufacturing Industries and Construction	CO2, CH4 & N2O	NA	NA	Revised Energy Data	
1.A.3	Transport	CO2, CH4 & N2O	NA	NA	Revised Energy Data	
1.A.4	Other Sectors	CO2, CH4 & N2O	NA	NA	Revised Energy Data	
1.A.5	Other	CO2, CH4 & N2O	NA	NA	Revised Energy Data	
2.C	Metal Production	CO2	NA	NA	Revised Energy Data	
2.G	Other	CO2	NA	NA	Revised Energy Data	
4.A	Enteric Fermentation	CH4	NA	NA	Revised Animal Population Data	
4.B	Manure Management	CH4 & N2O	NA	NA	Revised Animal Population Data	
4.D	Agriucltural Soil	N2O	NA	New Emission Factor - IPCC EF	New Cultivated Organic Soil Data	
Memo It	International Bunkers	CO2, CH4 & N2O	NA	NA	Revised Energy Data	
Memo It	CO2 Emissions from Biomass	CO2	Double Counting	NA	NA	

[1] Enter the identification code of the source/sink category (e.g. 1.B.1) in the first column and the name of the category (e.g. Fugitive Emissions from Solid Fuels) in the second column of the table (see Table 8(a)) .

[2] Explain changes in methods, emission factors and activity data that have resulted in recalculation of the estimate of the source/sink as indicated in Table 8(a). Include relevant changes in the assumptions and coefficients under the "Methods" column.

Documentation box: Use the documentation box to report the justifications of the changes as to improvements in the accuracy, completeness and consistency of the inventory.

Recalculation Tables 1996

TABLE 8(a) RECALCULATION - RECALCULATED DATA

Recalculated year: 1996

(Sheet 1 of 2)

Canada
1996
Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		CO_2			CH_4			N_2O		
		Previous submission	Latest submission	Difference[1]	Previous submission	Latest submission	Difference[1]	Previous submission	Latest submission	Difference[1]
		CO_2 equivalent (Gg)		(%)	CO_2 equivalent (Gg)		(%)	CO_2 equivalent (Gg)		(%)
Total National Emissions and Removals		**519,925.50**	**518,050.18**	**-0.36**	**89,518.32**	**90,177.77**	**0.74**	**65,708.62**	**71,749.44**	**9.19**
1. Energy		**467,207.36**	**466,430.10**	**-0.17**	**45,291.02**	**45,216.69**	**-0.16**	**11,589.54**	**11,259.84**	**-2.84**
1.A.	Fuel Combustion Activities	453,722.56	452,945.30	-0.17	6,035.40	5,961.07	-1.23	11,589.54	11,259.84	-2.84
1.A.1.	Energy Industries	152,802.44	154,517.31	1.12	35.37	39.26	11.02	910.93	882.57	-3.11
1.A.2.	Manufacturing Industries and Construction	53,945.88	55,303.27	2.52	39.93	36.04	-9.74	557.16	480.30	-13.80
1.A.3.	Transport	167,115.19	163,927.85	-1.91	574.17	500.05	-12.91	8,987.05	8,783.42	-2.27
1.A.4.	Other Sectors	79,859.05	79,196.87	-0.83	5,385.93	5,385.71	0.00	1,134.38	1,113.55	-1.84
1.A.5.	Other									
1.B.	Fugitive Emissions from Fuels									
1.B.1.	Solid fuel									
1.B.2.	Oil and Natural Gas									
2. Industrial Processes		**39,163.87**	**38,065.81**	**-2.80**						
2.A.	Mineral Products	7,835.50	8,034.29	2.54						
2.B.	Chemical Industry									
2.C.	Metal Production									
2.D.	Other Production									
2.G.	Other	15,185.65	13,888.79	-8.54						
3. Solvent and Other Product Use										
4. Agriculture					**22,527.85**	**23,261.63**	**3.26**	**39,541.68**	**45,912.19**	**16.11**
4.A.	Enteric Fermentation				18,157.96	18,196.50	0.21			
4.B.	Manure Management				4,369.89	5,065.13	15.91	4,551.04	5,020.79	10.32
4.C.	Rice Cultivation									
4.D.	Agricultural Soils [2]							34,990.64	40,891.40	16.86
4.E.	Prescribed Burning of Savannas									
4.F.	Field Burning of Agricultural Residues									
4.G.	Other									
5. Land-Use Change and Forestry (net)										
5.A.	Changes in Forest and Other Woody Biomass Stocks									
5.B.	Forest and Grassland Conversion									
5.C.	Abandonment of Managed Lands									
5.D.	CO_2 Emissions and Removals from Soil									
5.E.	Other									

[1] Estimate the percentage change due to recalculation with respect to the previous submission (Percentage change = 100% x [(LS-PS)/PS], where LS = Latest submission and PS = Previous submission.
All cases of recalculation of the estimate of the source/sink category, should be addressed and explained in Table 8(b) of this common reporting format.

[2] See footnote 4 to Summary 1.A of this common reporting format.

TABLE 8(a) RECALCULATION - RECALCULATED DATA
Recalculated year: 1996
(Sheet 2 of 2)

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		CO_2			CH_4			N_2O		
		Previous submission	Latest submission	Difference[1]	Previous submission	Latest submission	Difference[1]	Previous submission	Latest submission	Difference[1]
		CO_2 equivalent (Gg)		(%)	CO_2 equivalent (Gg)		(%)	CO_2 equivalent (Gg)		(%)
6. Waste										
6.A.	Solid Waste Disposal on Land									
6.B.	Wastewater Handling									
6.C.	Waste Incineration									
6.D.	Other									
7. Other *(please specify)*										
Memo Items:										
International Bunkers		**5,165.57**	**6,159.04**	**19.23**	**2.62**	**3.10**	**18.36**			
Multilateral Operations										
CO_2 Emissions from Biomass		**67,290.77**	**66,262.59**	**-1.53**						

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		HFCs			PFCs			SF_6		
		Previous submission	Latest submission	Difference[1]	Previous submission	Latest submission	Difference[1]	Previous submission	Latest submission	Difference[1]
		CO_2 equivalent (Gg)		(%)	CO_2 equivalent (Gg)		(%)	CO_2 equivalent (Gg)		(%)
Total Actual Emissions		**479.41**	**885.95**	**84.80**						
2.C.3.	Aluminium Production									
2.E.	Production of Halocarbons and SF_6									
2.F.	Consumption of Halocarbons and SF_6	479.41	885.95	84.80						
	Other									
Potential Emissions from Consumption of HFCs/PFCs and SF_6										

	Previous submission	Latest submission	Difference[1]
	CO_2 equivalent (Gg)		(%)
Total CO_2 Equivalent Emissions with Land-Use Change and Forestry [3]	682,872.84	688,104.33	0.77
Total CO_2 Equivalent Emissions without Land-Use Change and Forestry [3]	671,377.26	676,608.75	0.78

[3] The information in these rows is requested to facilitate comparison of data, since Parties differ in the way they report emissions and removals from Land-Use Change and Forestry.

TABLE 8(b) RECALCULATION - EXPLANATORY INFORMATION
(Sheet 1 of 1)

Canada
1996
Submission 2000

Specify the sector and source/sink category[1] where changes in estimates have occurred:		GHG	RECALCULATION DUE TO			
			CHANGES IN:			Addition/removal/ replacement of source/sink categories
			Methods [2]	Emission factors [2]	Activity data [2]	
1.A.1	Energy Industries	CO2, CH4 & N2O	NA	NA	Revised Energy Data	
1.A.2	Manufacturing Industries and Construction	CO2, CH4 & N2O	NA	NA	Revised Energy Data	
1.A.3	Transport	CO2, CH4 & N2O	NA	NA	Revised Energy Data	
1.A.4	Other Sectors	CO2, CH4 & N2O	NA	NA	Revised Energy Data	
1.A.5	Other	CO2, CH4 & N2O	NA	NA	Revised Energy Data	
2.A	Mineral Products	CO2	NA	NA	Revised Cement and Lime Production Data	
2.F	Consumption of Halocarbons and SF6	HFCs	IPCC Tier 2	IPCC	Detail HFC activity data	Detail HFC import, export and use pattern survey was conducted for 1996 and 1997 by Environment Canada
2.G	Other	CO2	NA	NA	Revised Energy Data	
4.A	Enteric Fermentation	CH4	NA	NA	Revised Animal Population Data	
4.B	Manure Management	CH4 & N2O	NA	NA	Revised Animal Population Data	
4.D	Agriucltural Soil	N2O	NA	New Emission Factor - IPCC EF	New Cultivated Organic Soil Data	
Memo It	International Bunkers	CO2, CH4 & N2O	NA	NA	Revised Energy Data	
Memo It	CO2 Emissions from Biomass	CO2	Double Counting	NA	NA	

[1] Enter the identification code of the source/sink category (e.g. 1.B.1) in the first column and the name of the category (e.g. Fugitive Emissions from Solid Fuels) in the second column of the table (see Table 8(a)) .

[2] Explain changes in methods, emission factors and activity data that have resulted in recalculation of the estimate of the source/sink as indicated in Table 8(a). Include relevant changes in the assumptions and coefficients under the "Methods" column.

Documentation box: Use the documentation box to report the justifications of the changes as to improvements in the accuracy, completeness and consistency of the inventory.

Recalculation Tables 1997

TABLE 8(a) RECALCULATION - RECALCULATED DATA

Recalculated year: 1997

(Sheet 1 of 2)

Canada
1997
Submission 2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		CO_2			CH_4			N_2O		
		Previous submission	Latest submission	Difference[1]	Previous submission	Latest submission	Difference[1]	Previous submission	Latest submission	Difference[1]
		CO_2 equivalent (Gg)		(%)	CO_2 equivalent (Gg)		(%)	CO_2 equivalent (Gg)		(%)
Total National Emissions and Removals		**534,879.22**	**533,359.77**	**-0.28**	**89,933.31**	**90,663.53**	**0.81**	**63,890.91**	**70,025.77**	**9.60**
1. Energy		**479,904.96**	**478,451.52**	**-0.30**	**45,175.47**	**45,151.18**	**-0.05**	**11,712.99**	**11,409.72**	**-2.59**
1.A.	Fuel Combustion Activities	466,272.69	464,819.25	-0.31	6,006.84	5,982.54	-0.40	11,712.99	11,409.72	-2.59
1.A.1.	Energy Industries	161,080.00	162,940.86	1.16	35.85	39.39	9.89	952.65	927.51	-2.64
1.A.2.	Manufacturing Industries and Construction	53,875.17	55,225.84	2.51	38.21	36.26	-5.12	538.21	486.19	-9.67
1.A.3.	Transport	174,070.78	170,334.69	-2.15	518.80	493.12	-4.95	9,084.01	8,885.92	-2.18
1.A.4.	Other Sectors	77,246.74	76,317.86	-1.20	5,413.98	5,413.78	0.00	1,138.11	1,110.11	-2.46
1.A.5.	Other									
1.B.	Fugitive Emissions from Fuels									
1.B.1.	Solid fuel									
1.B.2.	Oil and Natural Gas									
2. Industrial Processes		**38,464.75**	**38,398.74**	**-0.17**						
2.A.	Mineral Products	8,283.47	8,167.63	-1.40						
2.B.	Chemical Industry									
2.C.	Metal Production	11,906.56	11,894.66	-0.10						
2.D.	Other Production									
2.G.	Other	14,132.93	14,194.66	0.44						
3. Solvent and Other Product Use										
4. Agriculture					**22,569.88**	**23,324.39**	**3.34**	**39,175.06**	**45,613.18**	**16.43**
4.A.	Enteric Fermentation				18,333.13	18,371.67	0.21			
4.B.	Manure Management				4,236.75	4,952.72	16.90	4,630.83	5,113.87	10.43
4.C.	Rice Cultivation									
4.D.	Agricultural Soils [2]							34,544.23	40,499.31	17.24
4.E.	Prescribed Burning of Savannas									
4.F.	Field Burning of Agricultural Residues									
4.G.	Other									
5. Land-Use Change and Forestry (net)										
5.A.	Changes in Forest and Other Woody Biomass Stocks									
5.B.	Forest and Grassland Conversion									
5.C.	Abandonment of Managed Lands									
5.D.	CO_2 Emissions and Removals from Soil									
5.E.	Other									

[1] Estimate the percentage change due to recalculation with respect to the previous submission (Percentage change = 100% x [(LS-PS)/PS], where LS = Latest submission and PS = Previous submission.
All cases of recalculation of the estimate of the source/sink category, should be addressed and explained in Table 8(b) of this common reporting format.

[2] See footnote 4 to Summary 1.A of this common reporting format.

TABLE 8(a) RECALCULATION - RECALCULATED DATA
Recalculated year: 1997
(Sheet 2 of 2)

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		CO_2			CH_4			N_2O		
		Previous submission	Latest submission	Difference[1]	Previous submission	Latest submission	Difference[1]	Previous submission	Latest submission	Difference[1]
		CO_2 equivalent (Gg)		(%)	CO_2 equivalent (Gg)		(%)	CO_2 equivalent (Gg)		(%)
6. Waste										
6.A.	Solid Waste Disposal on Land									
6.B.	Wastewater Handling									
6.C.	Waste Incineration									
6.D.	Other									
7. Other *(please specify)*										
Memo Items:										
International Bunkers		**3,969.71**	**6,037.62**	**52.09**	**2.62**	**2.88**	**10.20**			
Multilateral Operations										
CO_2 Emissions from Biomass		**71,318.93**	**70,290.76**	**-1.44**						

GREENHOUSE GAS SOURCE AND SINK CATEGORIES		HFCs			PFCs			SF_6		
		Previous submission	Latest submission	Difference[1]	Previous submission	Latest submission	Difference[1]	Previous submission	Latest submission	Difference[1]
		CO_2 equivalent (Gg)		(%)	CO_2 equivalent (Gg)		(%)	CO_2 equivalent (Gg)		(%)
Total Actual Emissions		**479.41**	**864.07**	**80.23**						
2.C.3.	Aluminium Production									
2.E.	Production of Halocarbons and SF_6									
2.F.	Consumption of Halocarbons and SF_6	479.41	864.07	80.23						
	Other									
Potential Emissions from Consumption of HFCs/PFCs and SF_6										

	Previous submission	Latest submission	Difference[1]
	CO_2 equivalent (Gg)		(%)
Total CO_2 Equivalent Emissions with Land-Use Change and Forestry [3]	696,535.68	702,265.97	0.82
Total CO_2 Equivalent Emissions without Land-Use Change and Forestry [3]	681,552.01	687,282.30	0.84

[3] The information in these rows is requested to facilitate comparison of data, since Parties differ in the way they report emissions and removals from Land-Use Change and Forestry.

TABLE 8(b) RECALCULATION - EXPLANATORY INFORMATION
(Sheet 1 of 1)

Canada
1997
Submission 2000

Specify the sector and source/sink category[1] where changes in estimates have occurred:		GHG	RECALCULATION DUE TO			
			CHANGES IN:			Addition/removal/ replacement of source/sink categories
			Methods [2]	Emission factors [2]	Activity data [2]	
1.A.1	Energy Industries	CO2, CH4 & N2O	NA	NA	Revised Energy Data	
1.A.2	Manufacturing Industries and Construction	CO2, CH4 & N2O	NA	NA	Revised Energy Data	
1.A.3	Transport	CO2, CH4 & N2O	NA	NA	Revised Energy Data	
1.A.4	Other Sectors	CO2, CH4 & N2O	NA	NA	Revised Energy Data	
1.A.5	Other	CO2, CH4 & N2O	NA	NA	Revised Energy Data	
2.A	Mineral Products	CO2	NA	NA	Revised Cement and Lime Production Data	
2.C	Metal Production	CO2	NA	NA	Revised Energy Data	
2.F	Consumption of Halocarbons and SF6	HFCs	IPCC Tier 2	IPCC	Detail HFC activity data	Detail HFC import, export and use pattern survey was conducted for 1996 and 1997 by Environment Canada
2.G	Other	CO2	NA	NA	Revised Energy Data	
4.A	Enteric Fermentation	CH4	NA	NA	Revised Animal Population Data	
4.B	Manure Management	CH4 & N2O	NA	NA	Revised Animal Population Data	
4.D	Agriucltural Soil	N2O	NA	New Emission Factor - IPCC EF	New Cultivated Organic Soil Data	
Memo It	International Bunkers	CO2, CH4 & N2O	NA	NA	Revised Energy Data	
Memo It	CO2 Emissions from Biomass	CO2	Double Counting	NA	NA	

[1] Enter the identification code of the source/sink category (e.g. 1.B.1) in the first column and the name of the category (e.g. Fugitive Emissions from Solid Fuels) in the second column of the table (see Table 8(a)) .

[2] Explain changes in methods, emission factors and activity data that have resulted in recalculation of the estimate of the source/sink as indicated in Table 8(a). Include relevant changes in the assumptions and coefficients under the "Methods" column.

Documentation box: Use the documentation box to report the justifications of the changes as to improvements in the accuracy, completeness and consistency of the inventory.