

EU15

1990

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO ₂ emissions	CO ₂ removals	CH ₄	N ₂ O	HFCs		PFCs		SF ₆		NO _x	CO
	(Gg)				CO ₂ equivalent (Gg)				(Gg)			
	P	A	P	A	P	A	P	A	P	A		
Total National Emissions and Removals	3,341,803	-199,004	20,310	1,293	-	24,426	-	13,545	-	0.4	13,389	50,205
1. Energy	3,173,031		4,771	152							13,130	45,618
A. Fuel Combustion												
Reference Approach	-											
Sectoral Approach	3,146,887		831	152							13,104	45,452
1. Energy Industries	1,147,013		38	46							2,877	497
2. Manufacturing Industries and Construction	649,732		59	32							1,726	4,171
3. Transport	694,767		231	38							7,033	32,336
4. Other Sectors	635,943		500	36							1,372	8,305
5. Other	19,431		3	0							96	143
B. Fugitive Emissions from Fuels	26,144		3,940	0							26	166
1. Solid Fuels	9,283		2,396	0							1	87
2. Oil and Natural Gas	16,861		1,544	0							26	80
2. Industrial Processes	152,883		26	339	-	24,426	-	13,545	-	0.4	127	3,237
A. Mineral Products	111,937		1	0							15	29
B. Chemical Industry	12,729		18	339	-	2,340	-	70	-	0.0	76	86
C. Metal Production	25,663		7	0				11,825		0.1	19	3,104
D. Other Production	1,303										16	13
E. Production of Halocarbons and SF ₆						21,373		560		0.0		
F. Consumption of Halocarbons and SF ₆						362		855		0.3		
G. Other	1,251		0	0	-	0	-	0	-	0.0	1	5
3. Solvent and Other Product Use	5,725			11							0	2
4. Agriculture	3,215	0	8,628	748							78	430
A. Enteric Fermentation			6,857									
B. Manure Management			1,576	108								
C. Rice Cultivation			110	0								
D. Agricultural Soils	3,215	0	66	639							29	
E. Prescribed Burning of Savannas			0	0							0	0
F. Field Burning of Agricultural Residues			20	1							50	430
G. Other			0	0							0	0

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5. Land-Use Change and Forestry	-	-199,004	107	19							8	186
A. Changes in Forest and Other Woody Biomass Stocks	-	-235,706										
B. Forest and Grassland Conversion	8,274		19	1							5	186
C. Abandonment of Managed Lands	-	-150										
D. CO ₂ Emissions and Removals from Soil	28,887	-										
E. Other	-	-308	89	18							2	0
6. Waste	6,309		6,776	20							46	731
A. Solid Waste Disposal on Land	263		6,334	0							0	41
B. Wastewater Handling			354	18							0	0
C. Waste Incineration	5,545		38	2							45	691
D. Other	500		49	0							1	0
7. Other	640	0	2	4	0	0	0	0	0	0	0	0
Memo Items:												
International Bunkers	155,857		9	4							1,473	274
Aviation	56,516		4	1							215	158
Marine	99,341		4	3							1,258	116
Multilateral Operations	0		0	0							0	0
CO₂ Emissions from Biomass	118,899											

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1991

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO ₂	CO ₂	CH ₄	N ₂ O	HFCs		PFCs		SF ₆		NO _x	CO
	emissions	removals			P	A	P	A	P	A		
	(Gg)				CO ₂ equivalent (Gg)				(Gg)			
Total National Emissions and Removals	3,366,897	-223,441	19,806	1,281	-	24,514	-	11,949	-	0.4	13,281	48,326
1. Energy	3,206,067		4,650	157							13,023	44,040
A. Fuel Combustion												
Reference Approach	-											
Sectoral Approach	3,181,942		829	157							12,997	43,879
1. Energy Industries	1,151,715		39	47							2,797	483
2. Manufacturing Industries and Construction	626,131		56	31							1,706	3,885
3. Transport	709,478		222	41							7,012	31,323
4. Other Sectors	677,812		510	37							1,396	8,091
5. Other	16,807		2	1							85	97
B. Fugitive Emissions from Fuels	24,126		3,821	0							26	161
1. Solid Fuels	8,557		2,285	0							1	91
2. Oil and Natural Gas	15,568		1,536	0							26	71
2. Industrial Processes	145,825		25	340	-	24,514	-	11,949	-	0.4	124	2,870
A. Mineral Products	106,748		1	0							15	26
B. Chemical Industry	12,138		14	339	-	2,340	-	70	-	0.0	62	85
C. Metal Production	23,027		6	0				10,290		0.1	19	2,619
D. Other Production	1,130										16	13
E. Production of Halocarbons and SF ₆						21,433		479		0.0		
F. Consumption of Halocarbons and SF ₆					-	386	-	878	-	0.3		
G. Other	2,782		4	0	-	0	-	0	-	0.0	13	127
3. Solvent and Other Product Use	5,684			11							0	2
4. Agriculture	2,815	0	8,402	730							76	419
A. Enteric Fermentation			6,679									
B. Manure Management			1,531	101								
C. Rice Cultivation			107	0								
D. Agricultural Soils	2,815	0	66	628							27	
E. Prescribed Burning of Savannas			0	0							0	0
F. Field Burning of Agricultural Residues			19	1							49	419
G. Other			0	0							0	0

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5. Land-Use Change and Forestry	-	-223,441	104	19							5	102
A. Changes in Forest and Other Woody Biomass Stocks	-	-259,934										
B. Forest and Grassland Conversion	7,459		15	1							3	102
C. Abandonment of Managed Lands	-	-152										
D. CO ₂ Emissions and Removals from Soil	29,484	-										
E. Other	-	-297	89	18							2	0
6. Waste	5,890		6,623	21							53	893
A. Solid Waste Disposal on Land	321		6,192								0	45
B. Wastewater Handling			334	18							0	0
C. Waste Incineration	5,568		45	3							53	847
D. Other	0		52	0							0	1
7. Other	615	0	2	4	0	0	0	0	0	0	0	0
Memo Items:												
International Bunkers	156,368		9	4							1,440	262
Aviation	55,672		4	1							216	155
Marine	100,696		4	3							1,225	107
Multilateral Operations	0		0	0							0	0
CO₂ Emissions from Biomass	125,226											

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1992

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO ₂	CO ₂	CH ₄	N ₂ O	HFCs		PFCs		SF ₆		NO _x	CO
	emissions	removals			P	A	P	A	P	A		
	(Gg)				CO ₂ equivalent (Gg)				(Gg)			
Total National Emissions and Removals	3,290,290	-208,927	19,289	1,248	-	24,806	-	9,788	-	0.4	12,977	46,474
1. Energy	3,134,217		4,528	158							12,735	42,387
A. Fuel Combustion												
Reference Approach	-											
Sectoral Approach	3,110,444		779	158							12,709	42,241
1. Energy Industries	1,116,445		40	47							2,635	461
2. Manufacturing Industries and Construction	601,231		53	30							1,621	3,751
3. Transport	733,572		218	45							7,023	30,534
4. Other Sectors	646,189		467	35							1,350	7,405
5. Other	13,007		2	1							80	91
B. Fugitive Emissions from Fuels	23,773		3,748	0							26	146
1. Solid Fuels	8,357		2,213	0							0	85
2. Oil and Natural Gas	15,416		1,535	0							26	61
2. Industrial Processes	141,609		26	324	-	24,806	-	9,788	-	0.4	111	2,754
A. Mineral Products	105,033		1	0							14	26
B. Chemical Industry	11,550		16	324	-	2,340	-	70	-	0.0	52	82
C. Metal Production	21,221		6	0				8,231		0.1	18	2,532
D. Other Production	1,422										15	13
E. Production of Halocarbons and SF ₆						21,559		380		0.0		
F. Consumption of Halocarbons and SF ₆					-	547	-	901	-	0.3		
G. Other	2,383		4	0	-	0	-	0	-	0.0	13	101
3. Solvent and Other Product Use	5,461			11							0	2
4. Agriculture	2,321	0	8,263	712							72	333
A. Enteric Fermentation			6,542									
B. Manure Management			1,534	101								
C. Rice Cultivation			106	0								
D. Agricultural Soils	2,321	0	66	610							26	
E. Prescribed Burning of Savannas			0	0							0	0
F. Field Burning of Agricultural Residues			15	1							46	333
G. Other			0	0							0	0

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5. Land-Use Change and Forestry	-	-208,927	112	19							7	173
A. Changes in Forest and Other Woody Biomass Stocks	-	-247,539										
B. Forest and Grassland Conversion	9,329		23	1							5	173
C. Abandonment of Managed Lands	-	-167										
D. CO ₂ Emissions and Removals from Soil	29,758	-										
E. Other	-	-308	90	18							2	0
6. Waste	6,075		6,359	21							51	825
A. Solid Waste Disposal on Land	369		5,936								0	48
B. Wastewater Handling			325	18							0	0
C. Waste Incineration	5,706		43	3							51	776
D. Other	0		55	0							0	1
7. Other	608	0	2	4	0	0	0	0	0	0	0	0
Memo Items:												
International Bunkers	160,625		9	4							1,472	273
Aviation	60,102		4	1							236	168
Marine	100,524		4	3							1,237	106
Multilateral Operations	0		0	0							0	0
CO₂ Emissions from Biomass	123,678											

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1993

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO ₂	CO ₂	CH ₄	N ₂ O	HFCs		PFCs		SF ₆		NO _x	CO
	emissions	removals			P	A	P	A	P	A		
	(Gg)				CO ₂ equivalent (Gg)				(Gg)			
Total National Emissions and Removals	3,223,445	-219,669	18,736	1,212	-	27,250	-	8,403	-	0.4	12,341	44,154
1. Energy	3,073,699		4,289	158							12,116	40,410
A. Fuel Combustion												
Reference Approach	-											
Sectoral Approach	3,050,317		762	158							12,089	40,286
1. Energy Industries	1,059,905		42	45							2,382	443
2. Manufacturing Industries and Construction	579,877		52	28							1,526	3,670
3. Transport	738,008		210	49							6,765	28,881
4. Other Sectors	658,456		457	35							1,340	7,210
5. Other	14,070		1	1							77	82
B. Fugitive Emissions from Fuels	23,382		3,527	0							27	124
1. Solid Fuels	7,700		1,985	0							1	74
2. Oil and Natural Gas	15,683		1,542	0							27	50
2. Industrial Processes	135,694		26	302	-	27,250	-	8,403	-	0.4	101	2,585
A. Mineral Products	100,403		1	0							13	25
B. Chemical Industry	10,487		14	302	-	2,340	-	70	-	0.0	42	79
C. Metal Production	21,669		6	0				6,758		0.1	18	2,369
D. Other Production	1,246										15	13
E. Production of Halocarbons and SF ₆						22,480		281		0.0		
F. Consumption of Halocarbons and SF ₆					-	2,075	-	1,091	-	0.3		
G. Other	1,889		5	0	-	0	-	0	-	0.0	13	99
3. Solvent and Other Product Use	5,075			11							0	2
4. Agriculture	2,230	0	8,205	697							65	171
A. Enteric Fermentation			6,490									
B. Manure Management			1,536	97								
C. Rice Cultivation			106									
D. Agricultural Soils	2,230	0	66	598							25	
E. Prescribed Burning of Savannas			0	0							0	0
F. Field Burning of Agricultural Residues			8	1							41	171
G. Other			0	0							0	0

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5. Land-Use Change and Forestry	-	-219,669	110	19							7	177
A. Changes in Forest and Other Woody Biomass Stocks	-	-256,550										
B. Forest and Grassland Conversion	8,830		20	1							5	177
C. Abandonment of Managed Lands	-	-180										
D. CO ₂ Emissions and Removals from Soil	28,550	-										
E. Other	-	-319	90	18							2	0
6. Waste	6,191		6,104	21							51	809
A. Solid Waste Disposal on Land	357		5,686								0	47
B. Wastewater Handling			317	18							0	0
C. Waste Incineration	5,834		43	3							50	761
D. Other	0		58	0							0	1
7. Other	556	0	2	4	0	0	0	0	0	0	0	0
Memo Items:												
International Bunkers	171,238		9	4							1,548	296
Aviation	67,305		4	2							268	180
Marine	103,933		4	3							1,280	116
Multilateral Operations	0		0	0							0	0
CO₂ Emissions from Biomass	127,921											

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1994

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO ₂	CO ₂	CH ₄	N ₂ O	HFCs		PFCs		SF ₆		NO _x	CO
	emissions	removals			P	A	P	A	P	A		
	(Gg)				CO ₂ equivalent (Gg)				(Gg)			
Total National Emissions and Removals	3,232,829	-207,335	18,242	1,228	-	31,815	-	7,717	-	0.5	11,951	42,041
1. Energy	3,076,539		3,849	163							11,738	38,128
A. Fuel Combustion												
Reference Approach	-											
Sectoral Approach	3,051,119		717	162							11,712	37,993
1. Energy Industries	1,065,962		48	46							2,276	460
2. Manufacturing Industries and Construction	598,780		54	29							1,506	3,710
3. Transport	745,853		202	53							6,551	27,032
4. Other Sectors	627,881		412	33							1,305	6,711
5. Other	12,643		1	1							74	79
B. Fugitive Emissions from Fuels	25,420		3,133	1							26	135
1. Solid Fuels	7,246		1,609	0							1	78
2. Oil and Natural Gas	18,174		1,523	1							25	57
2. Industrial Processes	142,319		29	312	-	31,815	-	7,717	-	0.5	94	2,814
A. Mineral Products	104,386		1	0							13	25
B. Chemical Industry	10,560		16	311	-	2,340	-	20	-	0.0	37	80
C. Metal Production	22,523		7	0				5,902		0.1	18	2,582
D. Other Production	1,228										16	12
E. Production of Halocarbons and SF ₆						25,738		228		0.0		
F. Consumption of Halocarbons and SF ₆					-	3,109	-	1,355	-	0.4		
G. Other	3,622		6	0	-	0	-	0	-	0.0	11	115
3. Solvent and Other Product Use	5,034			11							0	2
4. Agriculture	2,069	0	8,222	699							63	170
A. Enteric Fermentation			6,492									
B. Manure Management			1,542	97								
C. Rice Cultivation			115	0								
D. Agricultural Soils	2,069	0	65	601							23	
E. Prescribed Burning of Savannas			0	0							0	0
F. Field Burning of Agricultural Residues			8	1							40	170
G. Other			0	0							0	0

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5. Land-Use Change and Forestry	-	-207,335	108	19							6	143
A. Changes in Forest and Other Woody Biomass Stocks	-	-243,275										
B. Forest and Grassland Conversion	8,584		19	1							4	143
C. Abandonment of Managed Lands	-	-190										
D. CO ₂ Emissions and Removals from Soil	27,757	-										
E. Other	-	-211	89	18							2	0
6. Waste	6,176		6,031	21							50	784
A. Solid Waste Disposal on Land	290		5,612								0	41
B. Wastewater Handling			317	18							0	0
C. Waste Incineration	5,886		42	3							50	741
D. Other	0		61	0							0	1
7. Other	692	0	2	4	0	0	0	0	0	0	0	0
Memo Items:												
International Bunkers	169,495		9	4							1,507	297
Aviation	68,334		5	2							271	185
Marine	101,161		4	2							1,236	113
Multilateral Operations	0		0	0							0	0
CO₂ Emissions from Biomass	128,478											

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1995

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO ₂	CO ₂	CH ₄	N ₂ O	HFCs		PFCs		SF ₆		NO _x	CO
	emissions	removals			P	A	P	A	P	A		
	(Gg)				CO ₂ equivalent (Gg)				(Gg)			
Total National Emissions and Removals	3,270,286	-198,149	18,138	1,228	-	35,830	-	7,765	-	0.5	11,567	40,490
1. Energy	3,111,262		3,811	167							11,363	36,527
A. Fuel Combustion												
Reference Approach	-											
Sectoral Approach	3,088,442		680	167							11,334	36,399
1. Energy Industries	1,072,576		56	46							2,182	444
2. Manufacturing Industries and Construction	616,996		55	31							1,490	3,630
3. Transport	752,232		197	58							6,275	25,939
4. Other Sectors	635,873		371	31							1,314	6,310
5. Other	10,766		1	1							74	76
B. Fugitive Emissions from Fuels	22,821		3,130	0							28	127
1. Solid Fuels	7,122		1,681	0							1	82
2. Oil and Natural Gas	15,698		1,449	0							27	45
2. Industrial Processes	145,788		25	305	-	35,830	-	7,765	-	0.5	84	2,918
A. Mineral Products	105,298		1	0							13	24
B. Chemical Industry	11,032		17	305	-	1,170	-	0	-	0.0	36	84
C. Metal Production	24,714		6	0				5,793		0.1	18	2,797
D. Other Production	1,212										16	13
E. Production of Halocarbons and SF ₆						28,152		175		0.0		
F. Consumption of Halocarbons and SF ₆					-	5,576	-	1,525	-	0.4		
G. Other	3,532		0	0	-	0	-	0	-	0.0	0	1
3. Solvent and Other Product Use	5,053			11							0	2
4. Agriculture	1,726	0	8,222	701							63	160
A. Enteric Fermentation			6,487									
B. Manure Management			1,550	96								
C. Rice Cultivation			114									
D. Agricultural Soils	1,726	0	65	603							25	
E. Prescribed Burning of Savannas			0	0							0	0
F. Field Burning of Agricultural Residues			7	1							39	160
G. Other			0	0							0	0

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5. Land-Use Change and Forestry	-	-198,149	105	19							5	108
A. Changes in Forest and Other Woody Biomass Stocks	-	-233,391										
B. Forest and Grassland Conversion	7,970		16	1							3	108
C. Abandonment of Managed Lands	-	-196										
D. CO ₂ Emissions and Removals from Soil	27,619	-										
E. Other	-	-150	89	18							2	0
6. Waste	5,757		5,973	21							51	775
A. Solid Waste Disposal on Land	124		5,548									28
B. Wastewater Handling			317	19							0	0
C. Waste Incineration	5,518		42	3							51	747
D. Other	115		66	0							0	0
7. Other	699	0	2	4	0	0	0	0	0	0	0	0
Memo Items:												
International Bunkers	173,310		9	4							1,537	307
Aviation	70,934		5	2							284	190
Marine	102,375		4	2							1,253	117
Multilateral Operations	0		0	0							0	0
CO₂ Emissions from Biomass	134,391											

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO ₂	CO ₂	CH ₄	N ₂ O	HFCs		PFCs		SF ₆		NO _x	CO
	emissions	removals			P	A	P	A	P	A		
	(Gg)				CO ₂ equivalent (Gg)				(Gg)			
Total National Emissions and Removals	3,340,775	-206,919	17,808	1,259	-	39,974	-	7,754	-	0.5	11,360	39,029
1. Energy	3,184,876		3,680	171							11,142	35,293
A. Fuel Combustion												
Reference Approach	-											
Sectoral Approach	3,161,380		704	170							11,115	35,164
1. Energy Industries	1,082,515		64	47							2,111	483
2. Manufacturing Industries and Construction	603,417		54	28							1,464	3,416
3. Transport	767,183		196	62							6,093	24,662
4. Other Sectors	697,624		390	32							1,380	6,540
5. Other	10,641		1	1							67	62
B. Fugitive Emissions from Fuels	23,496		2,976	0							27	128
1. Solid Fuels	7,356		1,505	0							1	83
2. Oil and Natural Gas	16,140		1,470	0							26	45
2. Industrial Processes	142,269		28	324	-	39,974	-	7,754	-	0.5	97	2,683
A. Mineral Products	102,618		1	0							13	23
B. Chemical Industry	11,366		20	323	-	0	-	0	-	0.0	43	116
C. Metal Production	23,670		6	0				5,694		0.1	25	2,525
D. Other Production	1,270										15	13
E. Production of Halocarbons and SF ₆						30,264		175		0.0		
F. Consumption of Halocarbons and SF ₆					-	8,922	-	1,709	-	0.4		
G. Other	3,345		0	0	-	0	-	0	-	0.0	0	5
3. Solvent and Other Product Use	5,069			11							0	2
4. Agriculture	1,825	0	8,263	710							65	173
A. Enteric Fermentation			6,519									
B. Manure Management			1,550	97								
C. Rice Cultivation			121	0								
D. Agricultural Soils	1,825	0	65	612							24	
E. Prescribed Burning of Savannas			0	0							0	0
F. Field Burning of Agricultural Residues			8	1							41	173
G. Other			0	0							0	0

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5. Land-Use Change and Forestry	-	-206,919	106	19							5	102
A. Changes in Forest and Other Woody Biomass Stocks	-	-242,555										
B. Forest and Grassland Conversion	7,989		16	1							3	102
C. Abandonment of Managed Lands	-	-199										
D. CO ₂ Emissions and Removals from Soil	28,077	-										
E. Other	-	-231	90	18							2	0
6. Waste	6,038		5,729	21							50	777
A. Solid Waste Disposal on Land	82		5,295									24
B. Wastewater Handling			320	19							0	0
C. Waste Incineration	5,956		42	3							50	753
D. Other	0		73	0							0	0
7. Other	698	0	2	4	0	0	0	0	0	0	0	0
Memo Items:												
International Bunkers	185,379		10	4							1,630	316
Aviation	75,473		5	2							299	198
Marine	109,905		4	3							1,331	118
Multilateral Operations	0		0	0							0	0
CO₂ Emissions from Biomass	140,777											

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1997

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO ₂	CO ₂	CH ₄	N ₂ O	HFCs		PFCs		SF ₆		NO _x	CO
	emissions	removals			P	A	P	A	P	A		
	(Gg)				CO ₂ equivalent (Gg)				(Gg)			
Total National Emissions and Removals	3,280,294	-207,107	17,321	1,256	-	47,141	-	7,505	-	0.5	10,896	37,423
1. Energy	3,121,403		3,481	174							10,677	33,406
A. Fuel Combustion												
Reference Approach	-											
Sectoral Approach	3,097,815		674	174							10,650	33,283
1. Energy Industries	1,045,861		64	46							1,944	400
2. Manufacturing Industries and Construction	613,732		54	30							1,473	3,467
3. Transport	777,733		184	66							5,832	22,940
4. Other Sectors	651,076		371	31							1,335	6,415
5. Other	9,414		1	1							66	62
B. Fugitive Emissions from Fuels	23,588		2,807	0							26	123
1. Solid Fuels	8,073		1,405	0							1	83
2. Oil and Natural Gas	15,515		1,402	0							25	41
2. Industrial Processes	145,533		24	315	-	47,141	-	7,505	-	0.5	95	2,891
A. Mineral Products	105,896		1	0							11	22
B. Chemical Industry	11,111		17	315	-	0	-	0	-	0.0	33	82
C. Metal Production	24,062		6	0				5,466		0.1	19	2,634
D. Other Production	1,185										16	14
E. Production of Halocarbons and SF ₆						33,282		175		0.0		
F. Consumption of Halocarbons and SF ₆					-	12,705	-	1,680	-	0.4		
G. Other	3,284		0	0	-	0	-	0	-	0.0	15	140
3. Solvent and Other Product Use	5,141			11							0	2
4. Agriculture	2,065	0	8,203	712							67	160
A. Enteric Fermentation			6,436									
B. Manure Management			1,575	96								
C. Rice Cultivation			121	0								
D. Agricultural Soils	2,065	0	65	615							24	
E. Prescribed Burning of Savannas			0	0							0	0
F. Field Burning of Agricultural Residues			7	1							43	160
G. Other			0	0							0	0

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5. Land-Use Change and Forestry	-	-207,107	106	19							6	120
A. Changes in Forest and Other Woody Biomass Stocks	-	-243,855										
B. Forest and Grassland Conversion	8,102		16	1							3	120
C. Abandonment of Managed Lands	-	-201										
D. CO ₂ Emissions and Removals from Soil	29,133	-										
E. Other	-	-285	90	18							2	0
6. Waste	5,594		5,505	21							52	844
A. Solid Waste Disposal on Land	65		5,059									22
B. Wastewater Handling			328	19							0	0
C. Waste Incineration	5,384		45	3							50	821
D. Other	145		73	0							2	1
7. Other	558	0	2	4	0	0	0	0	0	0	0	0
Memo Items:												
International Bunkers	200,982		10	5							1,793	336
Aviation	80,478		6	2							319	212
Marine	120,505		5	3							1,474	124
Multilateral Operations	0		0	0							0	0
CO₂ Emissions from Biomass	141,911											

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1998

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO ₂	CO ₂	CH ₄	N ₂ O	HFCs		PFCs		SF ₆		NO _x	CO
	emissions	removals			P	A	P	A	P	A		
	(Gg)				CO ₂ equivalent (Gg)				(Gg)			
Total National Emissions and Removals	3,330,477	-197,973	17,039	1,165	-	51,975	-	7,405	-	0.5	10,556	35,673
1. Energy	3,170,616		3,328	172							10,356	31,844
A. Fuel Combustion												
Reference Approach	-											
Sectoral Approach	3,146,705		673	172							10,329	31,735
1. Energy Industries	1,087,327		68	47							1,861	408
2. Manufacturing Industries and Construction	598,785		59	26							1,434	3,308
3. Transport	802,565		178	71							5,654	21,715
4. Other Sectors	649,316		367	28							1,338	6,249
5. Other	8,712		1	0							43	55
B. Fugitive Emissions from Fuels	23,911		2,655	0							27	110
1. Solid Fuels	7,970		1,268	0							1	70
2. Oil and Natural Gas	15,941		1,387	0							26	40
2. Industrial Processes	146,055		22	226	-	51,975	-	7,405	-	0.5	79	2,604
A. Mineral Products	108,432		1	0							12	23
B. Chemical Industry	11,010		15	226	-	0	-	0	-	0.0	32	70
C. Metal Production	22,692		6	0				5,294		0.1	20	2,497
D. Other Production	1,202										15	14
E. Production of Halocarbons and SF ₆						34,188		175		0.0		
F. Consumption of Halocarbons and SF ₆					-	16,413	-	1,734	-	0.4		
G. Other	2,724		0	0	-	0	-	0	-	0.0	0	0
3. Solvent and Other Product Use	5,194			11							0	2
4. Agriculture	2,031	0	8,184	710							63	158
A. Enteric Fermentation			6,408									
B. Manure Management			1,589	96								
C. Rice Cultivation			115	0								
D. Agricultural Soils	2,031	0	64	613							25	
E. Prescribed Burning of Savannas			0	0							0	0
F. Field Burning of Agricultural Residues			7	1							38	158
G. Other			0	0							0	0

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5. Land-Use Change and Forestry	-	-197,973	120	19							9	240
A. Changes in Forest and Other Woody Biomass Stocks	-	-237,380										
B. Forest and Grassland Conversion	11,572		29	1							7	240
C. Abandonment of Managed Lands	-	-202										
D. CO ₂ Emissions and Removals from Soil	28,432	-										
E. Other	-	-396	91	18							2	0
6. Waste	5,861		5,383	22							49	825
A. Solid Waste Disposal on Land	59		4,928									21
B. Wastewater Handling			335	19							0	0
C. Waste Incineration	5,245		44	3							49	803
D. Other	557		76	0							0	0
7. Other	720	0	2	4	0	0	0	0	0	0	0	0
Memo Items:												
International Bunkers	212,630		11	5							1,768	350
Aviation	86,876		6	2							361	226
Marine	125,754		5	3							1,407	124
Multilateral Operations	0		0	0							0	0
CO₂ Emissions from Biomass	144,357											

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1999

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO ₂	CO ₂	CH ₄	N ₂ O	HFCs		PFCs		SF ₆		NO _x	CO
	emissions	removals			P	A	P	A	P	A		
	(Gg)				CO ₂ equivalent (Gg)				(Gg)			
Total National Emissions and Removals	3,308,494	-206,134	16,702	1,097	-	40,672	-	7,331	-	0.4	10,215	33,848
1. Energy	3,146,623		3,184	177							10,023	30,302
A. Fuel Combustion												
Reference Approach	-											
Sectoral Approach	3,122,673		673	177							9,994	30,213
1. Energy Industries	1,066,494		76	46							1,758	397
2. Manufacturing Industries and Construction	589,543		60	27							1,414	3,416
3. Transport	823,166		170	75							5,451	20,078
4. Other Sectors	636,026		367	28							1,333	6,277
5. Other	7,444		1	0							38	45
B. Fugitive Emissions from Fuels	23,950		2,511	0							28	89
1. Solid Fuels	8,087		1,141	0							1	54
2. Oil and Natural Gas	15,863		1,369	0							27	35
2. Industrial Processes	147,684		22	153	-	40,672	-	7,331	-	0.4	78	2,418
A. Mineral Products	109,608		1	0							12	22
B. Chemical Industry	10,458		14	153	-	0	-	0	-	0.0	31	61
C. Metal Production	23,586		6	0				5,146		0.1	19	2,319
D. Other Production	1,293										16	13
E. Production of Halocarbons and SF ₆						18,464		84		0.0		
F. Consumption of Halocarbons and SF ₆					-	20,652	-	1,911	-	0.3		
G. Other	2,739		0	0	-	0	-	0	-	0.0	0	2
3. Solvent and Other Product Use	5,197			11							0	2
4. Agriculture	2,016	0	8,125	711							56	153
A. Enteric Fermentation			6,365									
B. Manure Management			1,578	96								
C. Rice Cultivation			111	0								
D. Agricultural Soils	2,016	0	64	614							26	
E. Prescribed Burning of Savannas			0	0							0	0
F. Field Burning of Agricultural Residues			7	1							30	153
G. Other			0	0							0	0

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5. Land-Use Change and Forestry	-	-206,134	106	19							5	117
A. Changes in Forest and Other Woody Biomass Stocks	-	-241,706										
B. Forest and Grassland Conversion	8,438		16	1							3	117
C. Abandonment of Managed Lands	-	-207										
D. CO ₂ Emissions and Removals from Soil	27,619	-										
E. Other	-	-278	91	18							2	0
6. Waste	6,225		5,263	22							52	856
A. Solid Waste Disposal on Land	54		4,800									21
B. Wastewater Handling			338	19							0	0
C. Waste Incineration	5,718		45	3							52	835
D. Other	453		81	0							0	0
7. Other	750	0	2	4	0	0	0	0	0	0	0	0
Memo Items:												
International Bunkers	212,127		10	5							1,726	350
Aviation	92,443		5	2							381	236
Marine	119,683		5	3							1,345	114
Multilateral Operations	0		0	0							0	0
CO₂ Emissions from Biomass	146,054											

2000

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO ₂ emissions	CO ₂ removals	CH ₄	N ₂ O	HFCs		PFCs		SF ₆		NO _x	CO
					P	A	P	A	P	A		
					(Gg)				CO ₂ equivalent (Gg)			
Total National Emissions and Removals	3,324,800	-180,681	16,275	1,091	-	47,285	-	6,846	-	0.4	9,497	30,817
1. Energy	3,159,695		2,954	177							9,297	27,455
A. Fuel Combustion												
Reference Approach	-											
Sectoral Approach	3,136,284		641	177							9,271	27,368
1. Energy Industries	1,092,146		79	48							1,608	366
2. Manufacturing Industries and Construction	594,615		63	27							1,163	2,992
3. Transport	822,954		154	77							5,149	17,896
4. Other Sectors	619,478		345	26							1,311	6,061
5. Other	7,091		1	0							41	53
B. Fugitive Emissions from Fuels	23,411		2,313	0							26	87
1. Solid Fuels	8,098		981	0							1	55
2. Oil and Natural Gas	15,313		1,332	0							25	32
2. Industrial Processes	150,528		22	150	-	47,285	-	6,846	-	0.4	80	2,358
A. Mineral Products	111,009		1	0							12	23
B. Chemical Industry	11,136		14	150	-	0	-	0	-	0.0	33	59

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C. Metal Production	24,024		6	0				4,613		0.1	20	2,261
D. Other Production	1,225										16	14
E. Production of Halocarbons and SF ₆						17,562		85		0.0		
F. Consumption of Halocarbons and SF ₆						- 29,723		- 2,148		- 0.3		
G. Other	3,134		0	0		- 0		- 0		- 0.0	0	0
3. Solvent and Other Product Use	5,353			11							0	2
4. Agriculture	2,046	0	8,015	707							64	153
A. Enteric Fermentation			6,256									
B. Manure Management			1,577	94								
C. Rice Cultivation			111	0								
D. Agricultural Soils	2,046	0	64	612							26	
E. Prescribed Burning of Savannas			0	0							0	0
F. Field Burning of Agricultural Residues			7	1							38	153
G. Other			0	0							0	0
5. Land-Use Change and Forestry	-	-180,681	122	19							5	94
A. Changes in Forest and Other Woody Biomass Stocks	-	-220,739										
B. Forest and Grassland Conversion	12,108		31	1							3	94
C. Abandonment of Managed Lands	-	-208										
D. CO ₂ Emissions and Removals from Soil	28,442	-										
E. Other	-	-284	91	18							2	0
6. Waste	6,447		5,161	22							49	755
A. Solid Waste Disposal on Land	32		4,697									19
B. Wastewater Handling			337	19							0	0
C. Waste Incineration	5,962		43	3							49	736
D. Other	453		84	0							0	0
7. Other	730	0	2	4	0	0	0	0	0	0	0	0
Memo Items:												
International Bunkers	232,247		11	5							1,902	368
Aviation	103,156		5	2							408	247
Marine	129,092		6	3							1,494	120
Multilateral Operations	0		0	0							0	0
CO₂ Emissions from Biomass	143,768											

90 91 92 93 94 95 96 97 98 99
 Sectoral approach + internat. bunkers from aviation 3,203,403 3,237,614 ##### ##### 3,119,453 ##### 3,236,853 3,178,293 3,233,581 #####

NMVOG	SO ₂
16,231	16,363
8,785	15,992
7,405	15,513
63	10,094
139	2,959
6,072	683
1,104	1,526
26	252
1,380	479
12	164
1,367	314
931	349
214	65
404	147
22	65
253	71
39	1
4,283	0
578	0
1	
0	
532	
0	
45	0
0	0

1,551	1
19	1
1,531	0
103	21
38	0
5	
44	20
16	1
0	0
184	955
62	15
122	940
0	0

NMVOG	SO ₂
15,687	14,825
8,435	14,496
7,106	14,189
66	9,518
139	2,580
5,783	647
1,103	1,242
15	202
1,330	306
11	20
1,318	286
968	309
247	57
352	130
18	62
231	37
121	22
4,112	0
554	0
1	
0	
513	
0	
40	0
0	0

1,504	0
11	
1,493	0
113	21
39	0
5	
51	21
18	0
0	0
183	914
60	16
122	898
0	0

NMVOG	SO ₂
15,187	13,652
8,201	13,355
6,915	13,052
60	8,805
137	2,408
5,662	623
1,043	1,025
14	192
1,286	303
10	18
1,276	285
972	275
247	56
353	115
18	54
240	32
115	19
3,947	0
514	0
1	
0	
483	
0	
31	0
0	0

1,439	0
12	
1,427	0
114	21
41	0
5	
48	21
20	0
0	0
186	889
66	18
120	871
0	0

NMVOG	SO ₂
14,540	12,429
7,770	12,157
6,573	11,832
58	7,892
128	2,171
5,352	638
1,022	957
13	173
1,197	326
8	18
1,188	308
964	251
263	50
345	102
17	52
239	30
100	17
3,860	0
462	0
1	
0	
450	
0	
11	0
0	0

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1,370	1
16	1
1,353	0
115	20
41	0
5	
47	20
21	0
0	0
189	959
70	18
119	940
0	0

NMVOG	SO ₂
14,376	11,277
7,424	11,012
6,233	10,721
67	7,088
127	1,995
5,071	661
956	803
13	174
1,190	291
7	15
1,183	276
939	245
244	51
344	99
16	54
247	25
89	16
3,856	0
503	0
1	
0	
492	
0	
10	0
0	0

1,541	0
13	
1,528	0
114	19
40	0
5	
46	19
24	0
0	0
181	908
73	19
108	889
0	0

NMVOG	SO ₂
13,043	10,198
7,085	9,939
5,949	9,661
64	6,350
125	1,966
4,808	557
940	623
13	165
1,136	278
7	11
1,129	267
933	241
255	60
378	106
19	50
254	24
26	1
3,779	0
502	0
1	
0	
492	
0	
9	0
0	0

630	0
11	
619	0
114	18
37	
5	
45	18
27	1
1	0
183	935
72	16
111	919
0	0

NMVOG	SO ₂
13,525	8,885
6,914	8,623
5,787	8,358
69	5,420
125	1,698
4,578	470
1,004	606
10	166
1,128	265
7	12
1,121	253
918	246
221	62
377	99
19	60
250	24
52	1
3,710	0
462	0
1	
0	
451	
0	
11	0
0	0

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1,403	0
10	
1,393	0
116	16
36	
5	
47	16
29	0
1	0
194	989
76	16
118	973
0	0

NMVOG	SO ₂
13,336	8,071
6,583	7,803
5,463	7,546
63	4,897
125	1,606
4,296	316
969	546
10	180
1,120	257
7	9
1,114	248
984	254
287	64
354	95
17	55
254	24
72	16
3,713	0
451	0
1	
0	
441	
0	
9	0
0	0

1,491	0
13	
1,478	0
116	14
33	
6	
50	13
27	1
0	0
210	1,080
80	19
130	1,061
0	0

NMVOG	SO ₂
12,511	7,665
6,080	7,418
5,075	7,147
65	4,622
130	1,430
3,945	398
927	512
8	185
1,005	272
6	9
999	262
924	233
282	60
331	95
19	57
268	20
23	0
3,646	0
434	0
1	
0	
423	
0	
9	0
0	0

1,311	0
14	
1,298	0
116	13
32	
6	
50	13
28	1
0	0
221	1,097
84	21
137	1,076
0	0

NMVOG	SO ₂
12,103	6,932
5,681	6,701
4,775	6,455
71	4,273
130	1,321
3,626	378
943	475
6	8
906	246
5	8
900	238
888	219
285	54
299	92
19	54
266	19
20	0
3,610	0
453	0
1	
0	
443	
0	
9	0
0	0

1,355	0
12	
1,342	0
117	12
31	
5	
51	12
30	1
0	0
220	1,042
88	20
132	1,023
0	0

NMVO	SO ₂
11,562	5,750
5,143	5,536
4,273	5,296
78	3,527
110	1,058
3,178	285
900	418
7	8
870	240
6	8
864	232
910	202
298	48
299	83

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20	53
274	18
18	0
3,619	0
452	0
1	
0	
441	
0	
10	0
0	0
1,325	0
0	
1,325	0
113	13
30	
5	
47	12
32	1
0	0
235	1,111
94	21
141	1,090
0	0