



*An Emissions Data Base for Integrated Assessment of
Climate Change Policy Using GTAP*

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An Emissions Data Base for Integrated Assessment of Climate Change Policy Using GTAP

1. Introduction

To facilitate integrated assessment of climate change policies with GTAP, we intend to compile an emissions data base compatible with the standard GTAP configuration. We plan to cover the three major greenhouse gases—CO₂, methane and nitrous oxide—in this emissions data base. This work is part of a US-EPA sponsored project. Although the focus of this project is on non-CO₂ emissions, a useful starting point involved incorporation of CO₂ emissions from fossil fuels in the data base. Subsequent drafts of this paper will add non CO₂ emissions and net GHG emissions from land use changes.

2. Calculating CO₂ emissions from fossil fuel combustion

We first calculate CO₂ emissions from the GTAP energy volume data base¹ following the Tier 1 method of the revised 1996 IPCC Guideline (IPCC/OECD/IEA, 1997). To this first draft², we summarize CO₂ emissions and energy consumption of the following countries:

- | | |
|---|--|
| (1) Australia (see Tables 1a and 1b); | (2) China (see Tables 2a and 2b); |
| (3) Japan (see Tables 3a and 3b); | (4) Taiwan (see Tables 4a and 4b); |
| (5) India (see Tables 5a and 5b); | (6) Canada (see Tables 6a and 6b); |
| (7) United States (see Tables 7a and 7b); | (8) France (see Tables 8a and 8b); and |
| (9) Germany (see Tables 9a and 9b); | (10) The Netherlands (see Tables 10a and 10b). |

Next we explain how we calculate CO₂ emissions from the GTAP energy volume data. The procedure for calculating CO₂ emissions from the GTAP data base entails the following procedures.

- A. We follow the Tier 1 method as suggested in the revised 1996 IPCC Guidelines (IPCC/OECD/IEA, 1997) to estimate CO₂ emissions, based on the GTAP energy volume data. The formula to calculate CO₂ emissions is as follows:

$$CO2_{isjr} = \left(FC_{isjr} \times CC_i \times (1 - CST_{ijr}) \times EF_i \times FOC_i \times \left(\frac{44}{12} \right) \right) / 1000, \\ i \in EGY_COMM, s \in SRC, j \in ALLSEC, r \in REG. \quad (1)$$

Set EGY_COMM contains six energy commodities by GTAP classification: coal, crude oil, natural gas, petroleum products, electricity, and gas;
set SRC refers to two sources of commodities: domestically-produced and imports;
set ALLSECT contains all producers and households; and
set REG contains all 66 regions of GTAP version 6 data base classification.

¹ An alternative would be to utilize CO₂ emissions data from experts of various institutes. We opted to calculate CO₂ emissions from the GTAP energy volume data base to ensure an internal consistency in terms of classification of uses as well as consistency between values and volumes.

² Comments are welcome and appreciated.

Coefficients are defined as follows:

$CO2_{isjr}$: CO₂ emissions (Gg) from energy commodity i of source s used by sector j of region r;

FC_{isjr} : fuel consumption (1000 toe) of energy commodity i of source s by sector j of region r;

CC_i : conversion coefficient (TJ/1000 toe) of energy commodity i;

CST_{ijr} : ratio of carbon stored of energy commodity i used by sector j of region r;

EF_i : emission factor (tones Carbon/TJ) of energy commodity i; and

FOC_i : fraction of carbon oxidized of energy commodity i.

(TJ: Tera Joule; Gg: Giga-gram; 1 Gg = 10³ tonne)

GTAP-commodity-specific values of coefficients CC, EF, and FOC are listed in Table A1.

- B. Coefficient CST in Equation 1 accounts for fuels used as feedstocks—natural gas and petroleum products used by petrochemical sector. Ratios of feedstock usage of the petrochemical sector are derived from the energy balance tables (OECD/IEA, 1999a; OECD/IEA, 1999b). We list the feedstock ratios in Table A2 in the appendix. For some non-OECD countries whose feedstock ratios are not available, we use as proxies the feedstock ratios of adjacent countries. This is an arbitrary assumption that adjacent countries may have similar technology of production. We will replace the assumption with specific information when it is available.
- C. Primary energy commodities are largely used for energy transformation. We specify non-zero values of CST to avoid double-counting of CO₂ emissions for energy transformation activities. Due to dearth of information, we arbitrarily assume unity for the CST's corresponding to energy transformation activities.
- D. Table a of each country shows CO₂ emissions from and volume of energy consumption by sectors (following classification of GTAP version 6 data base). Unit of CO₂ emissions is giga-gram (Gg). Unit of energy consumption is ton of oil equivalent (toe).
- E. Table b of each country shows the significance of CO₂ emissions from all energy-using economic activities.
- F. Energy consumption volume is from the GTAP energy volume data of 1997.

References

- IPCC/OECD/IEA. (1997). *Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories*. Paris: Intergovernmental Panel on Climate Change (IPCC), Organization for Economic Co-operation and Development (OECD), International Energy Agency (IEA).
- OECD/IEA. (1999a). *Energy Balances of OECD Countries, 1996-1997*. Paris: Organization for Economic Co-operation and Development (OECD), International Energy Agency (IEA).
- OECD/IEA. (1999b). *Energy Balances of Non-OECD Countries, 1996-1997*. Paris: Organization for Economic Co-operation and Development (OECD), International Energy Agency (IEA).

Table 1a. CO₂ emissions and fossil fuel consumption of Australia, 1997

No.	Emitters/users	Energy commodities											
		Coal		Crude oil		Natural gas		Petroleum products		Electricity		Gas	
		CO ₂	Usage	CO ₂	Usage	CO ₂	Usage	CO ₂	Usage	CO ₂	Usage	CO ₂	Usage
1	Paddy rice	0.00	0.04	0.00	0.00	0.20	85.61	39.71	12937.90	0.00	1408.49	0.00	0.15
2	Wheat	3.57	920.03	0.00	0.00	2.82	1207.65	515.67	168017.11	0.00	17307.59	0.03	9.68
3	Cereal grains n.e.c.	0.08	21.50	0.00	0.00	1.41	602.36	272.69	88848.97	0.00	9503.52	0.03	10.31
4	Vegetables, fruit, nuts	0.04	11.56	0.00	0.00	53.99	23099.89	323.25	105323.05	0.00	28821.80	0.06	19.52
5	Oil seeds	0.08	19.35	0.00	0.00	4.42	1889.15	34.21	11145.26	0.00	1251.14	5.62	1892.88
6	Sugar cane, sugar beet	0.05	12.90	0.00	0.00	12.29	5258.68	73.60	23979.63	0.00	6562.82	0.01	2.47
7	Plant-based fibers	0.55	142.88	0.00	0.00	50.59	21648.31	120.17	39153.91	0.00	10692.74	41.64	14026.03
8	Crops n.e.c.	3.48	895.56	0.00	0.00	301.61	129055.29	237.13	77263.63	0.00	15798.46	378.68	127553.62
9	Bovine cattle, sheep and goats, horses	0.01	3.60	0.00	0.00	6.13	2621.91	715.50	233124.48	0.00	29846.06	0.06	20.57
10	Animal products n.e.c.	0.45	115.88	0.00	0.00	1172.46	501683.53	203.15	66191.73	0.00	41145.04	99.30	33449.49
11	Raw milk	0.02	5.28	0.00	0.00	139.40	59648.41	219.61	71552.53	0.00	40995.52	193.51	65181.74
12	Wool, silk-worm cocoons	0.46	119.03	0.00	0.00	34.82	14897.51	399.20	130068.23	0.00	15668.47	43.06	14505.27
13	Forestry	0.02	5.28	0.00	0.00	155.58	66571.81	328.59	107061.05	0.00	3108.05	25.01	8425.18
14	Fishing	0.19	49.78	0.00	0.00	34.43	14732.85	717.61	233813.69	0.00	13186.93	79.04	26623.14
15	Coal	2.20	567.03	0.52	171.81	0.18	78.41	0.89	291.42	0.00	144.45	0.02	6.00
16	Oil	1.94	499.46	0.46	151.76	0.16	69.31	0.79	256.28	0.00	127.10	0.02	5.26
17	Gas	1.09	281.94	0.25	83.57	516.94	221193.53	61.46	20023.39	0.00	71.30	50.11	16880.63
18	Minerals n.e.c.	896.33	230924.66	0.00	0.25	54.90	23489.20	2962.96	965395.63	0.00	639509.06	90.12	30356.29
19	Bovine meat prods	167.09	43048.84	0.00	0.00	109.44	46830.02	48.02	15646.17	0.00	62441.07	79.71	26850.31
20	Meat products n.e.c.	47.88	12334.86	0.00	0.00	31.33	13406.28	13.77	4486.51	0.00	17891.69	22.83	7691.52
21	Vegetable oils and fats	24.56	6327.42	0.00	0.00	15.18	6495.56	2.43	791.60	0.00	5717.63	8.23	2773.79
22	Dairy products	299.13	77064.33	0.00	0.01	231.24	98946.39	34.83	11349.84	0.00	56268.14	80.87	27241.60
23	Processed rice	9.24	2380.16	0.00	0.00	8.48	3628.09	1.11	363.16	0.00	6230.36	6.33	2130.57
24	Sugar	34.25	8823.98	0.00	0.04	23.21	9932.08	14.55	4739.44	0.00	9349.26	14.64	4930.24
25	Food products n.e.c.	568.65	146502.02	0.00	0.15	392.35	167884.27	231.24	75344.02	0.00	215134.17	283.67	95552.67
26	Beverages and tobacco products	132.59	34160.71	0.00	0.00	113.56	48592.11	87.23	28420.98	0.00	69223.58	113.85	38349.45
27	Textiles	89.12	22959.75	0.00	0.00	213.07	91168.95	48.95	15949.50	0.00	121444.61	119.06	40105.23
28	Wearing apparel	4.67	1202.85	0.00	0.00	10.01	4283.94	6.80	2217.10	0.00	29754.82	17.13	5769.31
29	Leather products	12.44	3204.38	0.00	0.00	13.58	5812.05	7.37	2400.42	0.00	16321.91	9.73	3277.84

....continued

Table 1a (continued)

No.	Emitters/users	Energy commodities											
		Coal		Crude oil		Natural gas		Petroleum products		Electricity		Gas	
		CO ₂	Usage	CO ₂	Usage	CO ₂	Usage	CO ₂	Usage	CO ₂	Usage	CO ₂	Usage
30	Wood products	99.51	25637.31	0.00	0.08	41.74	17858.28	105.19	34273.89	0.00	111493.01	39.03	13146.28
31	Paper products, publishing	788.77	203213.13	0.00	0.02	784.84	335824.59	108.57	35374.38	0.00	367994.97	423.67	142709.27
32	Petroleum, coal products	0.00	8.90	0.00	36419992.00	331.74	141946.70	6622.28	2157682.25	0.00	5.22	84.80	28563.39
33	Chemical, rubber, plastic products	650.56	167604.34	1.10	362.40	1203.47	696701.06	1444.18	3678817.25	0.00	369437.69	1291.90	435164.41
34	Mineral products n.e.c.	1856.80	478371.66	0.00	0.04	1246.25	533256.81	341.14	111149.67	0.00	271199.31	1764.87	594480.75
35	Ferrous metals	5573.53	1435921.75	0.00	0.00	928.42	397261.38	124.58	40590.84	0.00	463196.53	227.07	76487.71
36	Metals n.e.c.	4915.63	1266425.88	0.00	0.20	4020.19	1720198.63	2441.61	795530.75	0.00	2448566.25	2157.45	726716.25
37	Metal products	0.07	18.71	0.00	0.02	125.86	53853.45	66.70	21731.24	0.00	66199.09	88.55	29826.06
38	Motor vehicles and parts	2.50	643.61	0.00	0.88	142.94	61161.32	29.51	9613.93	0.00	147068.28	184.17	62034.95
39	Transport equipment n.e.c.	1.77	456.99	0.00	0.00	61.19	26181.06	32.34	10537.30	0.00	84794.00	35.44	11938.94
40	Electronic equipment	0.00	0.20	0.00	0.00	5.41	2315.45	4.12	1342.78	0.00	12781.75	6.38	2149.00
41	Machinery and equipment n.e.c.	0.02	5.35	0.01	2.63	73.71	31539.21	44.60	14530.66	0.00	67854.65	77.86	26226.63
42	Manufactures n.e.c.	0.04	11.01	0.00	0.01	0.51	219.60	0.26	84.81	0.00	32.51	0.26	88.59
43	Electricity	151834.27	39117436.00	3.02	994.12	3828.96	1638374.50	1718.23	559836.06	0.00	2459003.75	9126.80	3074272.75
44	Gas manufacture, distribution	0.05	12.03	0.00	0.23	0.00	1016286.31	8.14	2652.68	0.00	2.26	1105.61	372414.72
45	Water	5.80	1495.32	0.00	0.04	0.60	255.70	73.77	24036.41	0.00	211711.42	0.17	57.44
46	Construction	0.10	26.08	0.04	11.62	10.88	4657.50	3170.82	1033121.44	0.00	3243.91	5.42	1824.45
47	Trade	256.48	66077.13	0.00	0.05	196.57	84111.19	11263.88	3670014.50	0.00	151475.72	380.94	128317.54
48	Transport n.e.c.	2.83	730.23	0.00	0.00	27.69	11848.31	15724.37	5123337.50	0.00	42189.79	11.25	3788.48
49	Water transport	118.41	30506.95	0.00	0.01	0.90	385.45	2298.56	748919.00	0.00	910.20	0.06	21.85
50	Air Transport	0.19	49.07	0.00	0.00	1.58	676.16	20948.59	6825502.00	0.00	3558.41	3.76	1266.33
51	Communication	0.00	0.01	0.00	0.00	129.18	55275.02	95.33	31058.94	0.00	94367.10	162.17	54625.15
52	Financial services n.e.c.	0.00	0.13	0.00	0.00	19.02	8137.13	8.48	2763.68	0.00	98288.86	7.54	2538.60
53	Insurance	0.00	0.04	0.00	0.00	1.35	578.42	0.12	39.21	0.00	409.09	3.22	1085.90
54	Business services n.e.c.	108.14	27859.77	0.04	14.52	174.92	74846.71	358.11	116679.52	0.00	989027.75	339.38	114315.41
55	Recreational and other services	14.52	3741.31	0.00	0.03	110.94	47468.46	211.96	69062.19	0.00	342199.47	128.14	43162.86
56	Public Admin., Defense, Education, Health	163.56	42138.87	0.00	0.07	687.73	294271.06	256.90	83703.63	0.00	1496127.75	946.78	318915.28
57	Dwellings	0.00	0.00	0.00	0.00	0.07	28.36	0.54	176.75	0.00	78.06	0.16	53.08
58	Households	28.15	7251.55	1.36	446.27	907.04	388112.94	33505.10	10916682.00	0.00	3912042.25	2567.74	864918.38
	Total	168721.88	43468248.39	6.80	36422232.83	18767.48	9228443.91	108730.47	38635001.89	0.00	15700184.83	22932.96	7724751.21

Table 1b. Significance of CO₂ emissions from emitters (%): Australia, 1997

No. Emitters/users	Energy commodities						
	Coal	Crude oil	Natural gas	Petroleum products	Electricity	Gas	
1	Paddy rice	0.00	0.00	0.00	0.01	0.00	0.00
2	Wheat	0.00	0.00	0.00	0.16	0.00	0.00
3	Cereal grains n.e.c.	0.00	0.00	0.00	0.09	0.00	0.00
4	Vegetables, fruit, nuts	0.00	0.00	0.02	0.10	0.00	0.00
5	Oil seeds	0.00	0.00	0.00	0.01	0.00	0.00
6	Sugar cane, sugar beet	0.00	0.00	0.00	0.02	0.00	0.00
7	Plant-based fibers	0.00	0.00	0.02	0.04	0.00	0.01
8	Crops n.e.c.	0.00	0.00	0.09	0.07	0.00	0.12
9	Bovine cattle, sheep and goats, horses	0.00	0.00	0.00	0.22	0.00	0.00
10	Animal products n.e.c.	0.00	0.00	0.37	0.06	0.00	0.03
11	Raw milk	0.00	0.00	0.04	0.07	0.00	0.06
12	Wool, silk-worm cocoons	0.00	0.00	0.01	0.13	0.00	0.01
13	Forestry	0.00	0.00	0.05	0.10	0.00	0.01
14	Fishing	0.00	0.00	0.01	0.22	0.00	0.02
15	Coal	0.00	0.00	0.00	0.00	0.00	0.00
16	Oil	0.00	0.00	0.00	0.00	0.00	0.00
17	Gas	0.00	0.00	0.16	0.02	0.00	0.02
18	Minerals n.e.c.	0.28	0.00	0.02	0.93	0.00	0.03
19	Bovine meat prods	0.05	0.00	0.03	0.02	0.00	0.02
20	Meat products n.e.c.	0.02	0.00	0.01	0.00	0.00	0.01
21	Vegetable oils and fats	0.01	0.00	0.00	0.00	0.00	0.00
22	Dairy products	0.09	0.00	0.07	0.01	0.00	0.03
23	Processed rice	0.00	0.00	0.00	0.00	0.00	0.00
24	Sugar	0.01	0.00	0.01	0.00	0.00	0.00
25	Food products n.e.c.	0.18	0.00	0.12	0.07	0.00	0.09
26	Beverages and tobacco products	0.04	0.00	0.04	0.03	0.00	0.04
27	Textiles	0.03	0.00	0.07	0.02	0.00	0.04
28	Wearing apparel	0.00	0.00	0.00	0.00	0.00	0.01
29	Leather products	0.00	0.00	0.00	0.00	0.00	0.00
30	Wood products	0.03	0.00	0.01	0.03	0.00	0.01
31	Paper products, publishing	0.25	0.00	0.25	0.03	0.00	0.13
32	Petroleum, coal products	0.00	0.00	0.10	2.07	0.00	0.03
33	Chemical, rubber, plastic products	0.20	0.00	0.38	0.45	0.00	0.40
34	Mineral products n.e.c.	0.58	0.00	0.39	0.11	0.00	0.55
35	Ferrous metals	1.75	0.00	0.29	0.04	0.00	0.07
36	Metals n.e.c.	1.54	0.00	1.26	0.77	0.00	0.68
37	Metal products	0.00	0.00	0.04	0.02	0.00	0.03
38	Motor vehicles and parts	0.00	0.00	0.04	0.01	0.00	0.06
39	Transport equipment n.e.c.	0.00	0.00	0.02	0.01	0.00	0.01
40	Electronic equipment	0.00	0.00	0.00	0.00	0.00	0.00
41	Machinery and equipment n.e.c.	0.00	0.00	0.02	0.01	0.00	0.02
42	Manufactures n.e.c.	0.00	0.00	0.00	0.00	0.00	0.00
43	Electricity	47.57	0.00	1.20	0.54	0.00	2.86
44	Gas manufacture, distribution	0.00	0.00	0.00	0.00	0.00	0.35
45	Water	0.00	0.00	0.00	0.02	0.00	0.00

....continued

Table 1b (continued)

No. Emitters/users	Energy commodities					
	Coal	Crude oil	Natural gas	Petroleum products	Electricity	Gas
46 Construction	0.00	0.00	0.00	0.99	0.00	0.00
47 Trade	0.08	0.00	0.06	3.53	0.00	0.12
48 Transport n.e.c.	0.00	0.00	0.01	4.93	0.00	0.00
49 Water transport	0.04	0.00	0.00	0.72	0.00	0.00
50 Air Transport	0.00	0.00	0.00	6.56	0.00	0.00
51 Communication	0.00	0.00	0.04	0.03	0.00	0.05
52 Financial services n.e.c.	0.00	0.00	0.01	0.00	0.00	0.00
53 Insurance	0.00	0.00	0.00	0.00	0.00	0.00
54 Business services n.e.c.	0.03	0.00	0.05	0.11	0.00	0.11
55 Recreational and other services	0.00	0.00	0.03	0.07	0.00	0.04
56 Public Admin., Defense, Education, Health	0.05	0.00	0.22	0.08	0.00	0.30
57 Dwellings	0.00	0.00	0.00	0.00	0.00	0.00
58 Households	0.01	0.00	0.28	10.50	0.00	0.80
Sub-total	52.86	0.00	5.88	34.07	0.00	7.19
Total				100.00		

Table 2a. CO₂ emissions and fossil fuel consumption of China, 1997

No.	Emitters/users	Energy commodities											
		Coal		Crude oil		Natural gas		Petroleum products		Electricity		Gas	
		CO ₂	Usage	CO ₂	Usage	CO ₂	Usage	CO ₂	Usage	CO ₂	Usage	CO ₂	Usage
1	Paddy rice	675.57	174048.20	0.00	0.00	0.00	0.00	1788.52	582737.30	0.00	416086.70	0.02	5.34
2	Wheat	252.18	64970.66	0.00	0.00	0.00	0.06	678.54	221083.70	0.00	155048.30	0.01	2.44
3	Cereal grains n.e.c.	668.99	172352.30	0.00	0.02	0.00	0.05	2023.43	659275.50	0.00	411335.90	0.02	6.24
4	Vegetables, fruit, nuts	4322.96	1113736.00	0.00	0.04	0.00	0.13	11430.23	3724214.00	0.00	2661349.00	0.12	39.97
5	Oil seeds	293.44	75600.55	0.00	0.02	0.00	0.01	779.63	254021.30	0.00	180678.90	0.01	2.59
6	Sugar cane, sugar beet	43.70	11258.68	0.00	0.00	0.00	0.00	119.04	38786.60	0.00	26900.19	0.00	0.38
7	Plant-based fibers	760.48	195923.10	0.00	0.02	0.00	0.01	2054.68	669457.40	0.00	468058.90	0.02	6.07
8	Crops n.e.c.	123.35	31778.04	0.00	0.00	0.00	0.00	348.35	113498.90	0.00	75897.91	0.00	1.36
9	Bovine cattle, sheep and goats, horses	1026.87	264555.20	15.56	5118.53	0.00	0.01	111.22	36238.68	0.00	19250.51	1.25	422.21
10	Animal products n.e.c.	21990.92	5665576.00	335.80	110473.40	0.00	0.26	2372.66	773062.20	0.00	411767.90	26.83	9038.71
11	Raw milk	70.42	18143.34	1.08	355.72	0.00	0.01	7.79	2538.81	0.00	1330.36	0.09	29.03
12	Wool, silk-worm cocoons	499.78	128759.60	16.45	5411.49	0.00	0.03	107.29	34956.76	0.00	9287.21	0.60	203.53
13	Forestry	4116.12	1060445.00	2.71	892.24	0.00	0.06	1978.17	644530.70	0.00	221311.20	1.48	497.17
14	Fishing	4235.91	1091307.00	0.00	0.02	0.00	0.00	10184.09	3318195.00	0.00	376445.80	1.90	640.93
15	Coal	188.36	48528.20	0.00	0.02	0.02	6.59	5.04	1643.30	0.00	3483.01	0.76	255.53
16	Oil	31.38	8085.25	1.83	602.89	0.02	6.54	5.48	1784.04	0.00	1704.50	0.15	49.01
17	Gas	42.74	11010.25	0.32	104.16	2787.19	1192608.00	606.19	197509.40	0.00	313.90	43.98	14813.93
18	Minerals n.e.c.	14293.50	3682470.00	9.07	2984.11	4.68	2003.86	1059.81	345310.30	0.00	1612467.00	133.56	44988.05
19	Bovine meat prods	1141.36	294052.60	0.00	0.01	0.00	0.02	59.48	19380.08	0.00	93594.80	2.44	820.69
20	Meat products n.e.c.	772.14	198928.50	0.00	0.14	0.00	0.20	43.46	14158.63	0.00	63404.82	1.69	567.89
21	Vegetable oils and fats	8810.59	2269893.00	3.58	1177.04	0.54	230.13	324.66	105780.20	0.00	428714.20	41.22	13884.80
22	Dairy products	548.46	141301.40	0.00	0.06	0.00	0.05	30.94	10082.39	0.00	44945.55	1.17	395.18
23	Processed rice	22229.51	5727044.00	8.88	2921.71	1.35	577.33	809.28	263679.50	0.00	1081566.00	103.94	35010.95
24	Sugar	196.58	50645.40	0.09	28.36	0.01	5.22	7.72	2516.13	0.00	9576.11	0.92	311.09
25	Food products n.e.c.	5492.82	1415128.00	2.51	826.08	0.34	143.54	225.87	73593.81	0.00	267930.50	25.80	8692.07
26	Beverages and tobacco products	18954.08	4883187.00	0.01	2.82	6.31	2699.06	447.82	145908.90	0.00	884264.90	122.17	41150.19
27	Textiles	32717.65	8429127.00	11.14	3665.88	72.40	30977.46	1473.66	480150.80	0.00	3119667.00	1163.47	391903.30
28	Wearing apparel	3689.65	950574.80	0.00	0.05	0.00	1.64	315.65	102845.30	0.00	351165.00	122.53	41274.05
29	Leather products	2314.57	596307.90	0.00	0.00	0.00	0.41	332.96	108486.20	0.00	248360.70	53.10	17887.74

....continued

Table 2a (continued)

No.	Emitters/users	Energy commodities											
		Coal		Crude oil		Natural gas		Petroleum products		Electricity		Gas	
		CO ₂	Usage	CO ₂	Usage	CO ₂	Usage	CO ₂	Usage	CO ₂	Usage	CO ₂	Usage
30	Wood products	9387.41	2418501.75	0.01	2.96	0.00	2.00	461.07	150226.95	0.00	472190.13	79.56	26799.91
31	Paper products, publishing	29754.24	7665658.00	2.79	918.90	0.31	133.55	1156.98	376970.44	0.00	1805921.50	35.83	12068.44
32	Petroleum, coal products	0.00	98452.03	0.00	170826944.00	0.96	409.41	47560.65	15496284.00	0.00	1958.27	3.18	1072.00
33	Chemical, rubber, plastic products	215622.44	55551336.00	4712.15	1550244.13	4334.22	4173390.50	33388.12	43390256.00	0.00	12118126.00	7390.67	2489474.00
34	Mineral products n.e.c.	240408.22	61936960.00	191.14	62882.05	538.93	230602.86	12614.94	4110220.00	0.00	5489549.00	558.69	188188.09
35	Ferrous metals	188309.09	48514536.00	174.90	57541.58	753.94	322603.69	11486.41	3742519.50	0.00	8117813.00	2272.61	765505.56
36	Metals n.e.c.	22286.32	5741678.50	16.68	5488.59	98.81	42278.80	2347.93	765005.75	0.00	3803090.75	547.18	184311.52
37	Metal products	9834.67	2533731.25	2.22	731.28	35.43	15158.44	868.53	282987.19	0.00	1801558.75	384.35	129464.49
38	Motor vehicles and parts	8295.42	2137169.00	2.04	671.44	40.93	17513.41	861.34	280644.38	0.00	758512.19	81.63	27495.17
39	Transport equipment n.e.c.	4604.18	1186185.38	1.28	421.89	10.01	4283.54	397.46	129502.48	0.00	623539.63	75.69	25494.05
40	Electronic equipment	2027.82	522432.84	0.21	68.74	152.62	65304.16	368.14	119946.32	0.00	345566.41	195.21	65754.64
41	Machinery and equipment n.e.c.	43381.91	11176587.00	23.49	7728.66	291.53	124741.29	3421.69	1114860.13	0.00	2165291.50	1155.91	389356.78
42	Manufactures n.e.c.	14732.39	3795541.25	5.70	1874.48	29.42	12586.47	834.21	271804.63	0.00	1004751.06	553.90	186576.44
43	Electricity	1304305.00	336031296.00	2437.83	802019.38	5744.66	2458082.75	57854.57	18850262.00	0.00	24398554.00	8011.80	2698698.50
44	Gas manufacture, distribution	11156.91	2874382.75	2.30	757.75	0.00	42728.79	1161.18	378338.16	0.00	285.51	5757.36	1939311.00
45	Water	443.28	114204.37	60.44	19884.13	0.26	110.58	344.57	112269.19	0.00	1490638.38	3.40	1144.95
46	Construction	7986.66	2057622.75	64.24	21132.86	0.01	3.84	3711.75	1209366.38	0.00	1465568.00	372.84	125587.66
47	Trade	9810.98	2527627.75	0.01	4.03	1.10	472.45	26421.18	8608588.00	0.00	839611.69	69.35	23360.63
48	Transport n.e.c.	13825.48	3561891.50	1.08	354.40	0.03	13.67	66209.78	21572572.00	0.00	511907.53	11.33	3817.81
49	Water transport	81.42	20976.05	0.00	0.00	0.00	0.00	21023.73	6849983.50	0.00	4601.88	0.49	164.83
50	Air Transport	52.39	13498.35	0.00	0.00	0.00	0.00	11991.07	3906948.00	0.00	7689.08	0.22	75.63
51	Communication	0.01	1.81	0.00	0.19	0.00	0.10	1907.75	621585.06	0.00	858862.81	79.19	26675.40
52	Financial services n.e.c.	717.83	184937.59	0.00	0.01	0.00	0.01	1391.55	453395.38	0.00	251939.00	66.74	22481.54
53	Insurance	211.18	54408.08	0.00	0.00	0.00	0.00	354.69	115566.19	0.00	40597.21	9.77	3291.41
54	Business services n.e.c.	8118.69	2091637.13	85.28	28055.60	1.22	522.83	1946.43	634187.50	0.00	369776.19	76.22	25673.99
55	Recreational and other services	4673.93	1204156.13	0.16	52.91	0.85	363.69	2240.04	729851.94	0.00	268297.66	53.78	18116.38
56	Public Admin., Defense, Education, Health	38968.67	10039594.00	652.71	214732.88	3.35	1435.27	32856.39	10705319.00	0.00	3497603.50	650.26	219033.83
57	Dwellings	31.11	8014.64	0.00	0.00	0.00	0.00	0.81	263.85	0.00	258.28	1.11	374.87
58	Households	225766.22	58164704.00	0.00	0.04	537.09	229816.47	91834.73	29921732.00	0.00	10824918.00	6758.83	2276647.25
	Total	2565297.95	661002458.87	8845.69	173737077.71	15448.54	8971819.25	476749.35	187846881.75	0.00	96984883.68	37106.35	12498917.21

Table 2b. Significance of CO₂ emissions from emitters (%): China, 1997

No.	Emitters/users	Energy commodities					
		Coal	Crude oil	Natural gas	Petroleum products	Electricity	Gas
1	Paddy rice	0.02	0.00	0.00	0.06	0.00	0.00
2	Wheat	0.01	0.00	0.00	0.02	0.00	0.00
3	Cereal grains n.e.c.	0.02	0.00	0.00	0.07	0.00	0.00
4	Vegetables, fruit, nuts	0.14	0.00	0.00	0.37	0.00	0.00
5	Oil seeds	0.01	0.00	0.00	0.03	0.00	0.00
6	Sugar cane, sugar beet	0.00	0.00	0.00	0.00	0.00	0.00
7	Plant-based fibers	0.02	0.00	0.00	0.07	0.00	0.00
8	Crops n.e.c.	0.00	0.00	0.00	0.01	0.00	0.00
9	Bovine cattle, sheep and goats, horses	0.03	0.00	0.00	0.00	0.00	0.00
10	Animal products n.e.c.	0.71	0.01	0.00	0.08	0.00	0.00
11	Raw milk	0.00	0.00	0.00	0.00	0.00	0.00
12	Wool, silk-worm cocoons	0.02	0.00	0.00	0.00	0.00	0.00
13	Forestry	0.13	0.00	0.00	0.06	0.00	0.00
14	Fishing	0.14	0.00	0.00	0.33	0.00	0.00
15	Coal	0.01	0.00	0.00	0.00	0.00	0.00
16	Oil	0.00	0.00	0.00	0.00	0.00	0.00
17	Gas	0.00	0.00	0.09	0.02	0.00	0.00
18	Minerals n.e.c.	0.46	0.00	0.00	0.03	0.00	0.00
19	Bovine meat prods	0.04	0.00	0.00	0.00	0.00	0.00
20	Meat products n.e.c.	0.02	0.00	0.00	0.00	0.00	0.00
21	Vegetable oils and fats	0.28	0.00	0.00	0.01	0.00	0.00
22	Dairy products	0.02	0.00	0.00	0.00	0.00	0.00
23	Processed rice	0.72	0.00	0.00	0.03	0.00	0.00
24	Sugar	0.01	0.00	0.00	0.00	0.00	0.00
25	Food products n.e.c.	0.18	0.00	0.00	0.01	0.00	0.00
26	Beverages and tobacco products	0.61	0.00	0.00	0.01	0.00	0.00
27	Textiles	1.05	0.00	0.00	0.05	0.00	0.04
28	Wearing apparel	0.12	0.00	0.00	0.01	0.00	0.00
29	Leather products	0.07	0.00	0.00	0.01	0.00	0.00
30	Wood products	0.30	0.00	0.00	0.01	0.00	0.00
31	Paper products, publishing	0.96	0.00	0.00	0.04	0.00	0.00
32	Petroleum, coal products	0.00	0.00	0.00	1.53	0.00	0.00
33	Chemical, rubber, plastic products	6.95	0.15	0.14	1.08	0.00	0.24
34	Mineral products n.e.c.	7.75	0.01	0.02	0.41	0.00	0.02
35	Ferrous metals	6.07	0.01	0.02	0.37	0.00	0.07
36	Metals n.e.c.	0.72	0.00	0.00	0.08	0.00	0.02
37	Metal products	0.32	0.00	0.00	0.03	0.00	0.01
38	Motor vehicles and parts	0.27	0.00	0.00	0.03	0.00	0.00
39	Transport equipment n.e.c.	0.15	0.00	0.00	0.01	0.00	0.00
40	Electronic equipment	0.07	0.00	0.00	0.01	0.00	0.01
41	Machinery and equipment n.e.c.	1.40	0.00	0.01	0.11	0.00	0.04
42	Manufactures n.e.c.	0.47	0.00	0.00	0.03	0.00	0.02
43	Electricity	42.03	0.08	0.19	1.86	0.00	0.26
44	Gas manufacture, distribution	0.36	0.00	0.00	0.04	0.00	0.19
45	Water	0.01	0.00	0.00	0.01	0.00	0.00

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Table 2b (continued)

No. Emitters/users	Energy commodities					
	Coal	Crude oil	Natural gas	Petroleum products	Electricity	Gas
46 Construction	0.26	0.00	0.00	0.12	0.00	0.01
47 Trade	0.32	0.00	0.00	0.85	0.00	0.00
48 Transport n.e.c.	0.45	0.00	0.00	2.13	0.00	0.00
49 Water transport	0.00	0.00	0.00	0.68	0.00	0.00
50 Air Transport	0.00	0.00	0.00	0.39	0.00	0.00
51 Communication	0.00	0.00	0.00	0.06	0.00	0.00
52 Financial services n.e.c.	0.02	0.00	0.00	0.04	0.00	0.00
53 Insurance	0.01	0.00	0.00	0.01	0.00	0.00
54 Business services n.e.c.	0.26	0.00	0.00	0.06	0.00	0.00
55 Recreational and other services	0.15	0.00	0.00	0.07	0.00	0.00
56 Public Admin., Defense, Education, Health	1.26	0.02	0.00	1.06	0.00	0.02
57 Dwellings	0.26	0.00	0.00	0.12	0.00	0.01
58 Households	7.27	0.00	0.02	2.96	0.00	0.22
Sub-total	82.93	0.28	0.49	15.48	0.00	1.18
Total				100.00		

Table 3a. CO₂ emissions and fossil fuel consumption of Japan, 1997

No.	Emitters/users	Energy commodities											
		Coal		Crude oil		Natural gas		Petroleum products		Electricity		Gas	
		CO ₂	Usage	CO ₂	Usage	CO ₂	Usage	CO ₂	Usage	CO ₂	Usage	CO ₂	Usage
1	Paddy rice	2.10	541.68	0.00	0.00	0.19	80.35	2307.88	751958.44	0.00	17627.97	0.00	1.62
2	Wheat	14.01	3609.87	0.00	0.00	1.85	790.08	73.40	23914.99	0.00	441.40	0.00	0.23
3	Cereal grains n.e.c.	0.63	161.78	0.00	0.00	0.93	397.27	51.81	16881.11	0.00	307.47	0.00	0.32
4	Vegetables, fruit, nuts	21.00	5410.06	0.00	0.00	27.19	11634.99	4310.11	1404326.25	0.00	18787.89	0.06	18.91
5	Oil seeds	0.02	6.23	0.00	0.00	0.01	5.94	3.91	1275.09	0.00	189.81	0.00	0.01
6	Sugar cane, sugar beet	1.61	414.06	0.00	0.00	0.72	308.79	55.79	18176.55	0.00	3.91	0.00	0.37
7	Plant-based fibers	12.75	3283.80	0.00	0.00	3.43	1465.57	1.69	550.61	0.00	33.23	0.01	3.12
8	Crops n.e.c.	4.92	1268.03	0.00	0.00	9.65	4130.15	3437.79	1120107.13	0.00	144312.34	0.04	12.52
9	Bovine cattle, sheep and goats, horses	0.69	177.46	0.00	0.00	6.22	2661.73	46.62	15189.70	0.00	1896.23	0.01	1.87
10	Animal products n.e.c.	4.63	1193.49	0.00	0.00	22.39	9582.14	175.74	57258.38	0.00	27578.41	0.02	5.78
11	Raw milk	3.19	820.90	0.00	0.00	17.25	7380.11	120.04	39113.13	0.00	17620.11	0.01	3.01
12	Wool, silk-worm cocoons	4.07	1048.40	0.00	0.00	2.03	870.07	16.86	5494.98	0.00	906.66	0.00	0.23
13	Forestry	1.51	388.28	0.00	0.00	0.00	0.24	1662.72	541750.13	0.00	15618.20	0.07	23.62
14	Fishing	1.03	264.90	0.00	0.00	1.30	554.34	21694.16	7068422.50	0.00	75357.73	1.18	397.62
15	Coal	0.02	5.42	0.00	0.00	0.00	0.06	0.02	7.99	0.00	60.57	0.00	0.00
16	Oil	0.00	0.00	0.00	0.03	0.00	1.04	0.02	5.58	0.00	18.99	0.00	0.83
17	Gas	0.00	0.22	0.00	0.00	0.00	0.00	1.36	444.67	0.00	2.96	0.00	0.00
18	Minerals n.e.c.	156.96	40437.85	0.00	0.00	322.85	138142.61	1616.76	526774.75	0.00	202491.45	0.56	188.31
19	Bovine meat prods	0.06	16.36	0.00	0.00	19.70	8427.69	24.02	7824.72	0.00	18022.99	6.71	2259.59
20	Meat products n.e.c.	0.30	78.39	0.00	0.00	81.73	34971.11	122.51	39917.52	0.00	62794.61	29.05	9785.31
21	Vegetable oils and fats	0.06	14.99	0.00	0.00	1.07	456.70	43.89	14301.16	0.00	12634.82	14.05	4732.16
22	Dairy products	0.19	48.93	0.00	0.00	114.79	49115.73	540.01	175947.67	0.00	178375.81	30.29	10202.88
23	Processed rice	0.08	20.16	0.00	0.00	12.70	5433.78	77.04	25102.15	0.00	115513.11	2.44	822.16
24	Sugar	0.27	68.86	0.00	0.00	6.07	2595.62	439.18	143093.80	0.00	43693.62	128.03	43125.07
25	Food products n.e.c.	3.49	899.60	0.00	0.01	563.38	241065.44	3591.96	1170339.25	0.00	1397058.38	689.99	232415.98
26	Beverages and tobacco products	251.49	64791.71	0.00	0.01	301.73	129107.00	1440.70	469410.16	0.00	423719.09	363.40	122408.30
27	Textiles	20.20	5204.10	0.00	0.00	90.88	38886.93	1751.33	570620.63	0.00	358140.28	76.65	25820.40
28	Wearing apparel	77.48	19961.39	0.00	0.00	52.88	22625.09	3729.53	1215159.88	0.00	396819.78	223.78	75379.22
29	Leather products	0.02	4.18	0.00	0.00	7.56	3232.83	201.76	65737.88	0.00	49260.80	1.99	670.31

....continued

Table 3a (continued)

No.	Emitters/users	Energy commodities											
		Coal		Crude oil		Natural gas		Petroleum products		Electricity		Gas	
		CO ₂	Usage	CO ₂	Usage	CO ₂	Usage	CO ₂	Usage	CO ₂	Usage	CO ₂	Usage
30	Wood products	34.87	8983.08	0.00	0.00	254.48	108889.33	4694.85	1529681.63	0.00	4137106.50	88.37	29766.07
31	Paper products, publishing	5046.27	1300083.38	0.00	0.00	291.21	124605.94	7903.78	2575222.75	0.00	3026463.75	1332.34	448786.69
32	Petroleum, coal products	0.00	47449.18	0.00	213985840.00	0.03	11.36	40676.33	13253222.00	0.00	388.56	0.00	0.05
33	Chemical, rubber, plastic products	3148.03	811033.50	7516.06	2472698.75	3455.22	1478453.25	7825.50	43013656.00	0.00	5609996.50	135.44	45622.95
34	Mineral products n.e.c.	23273.00	5995881.00	0.00	0.04	634.93	271677.97	10596.38	3452530.00	0.00	2034104.38	184.32	62086.95
35	Ferrous metals	46164.29	11893420.00	0.00	0.04	4483.39	1918397.13	8163.85	2659957.00	0.00	6978365.00	193.88	65305.02
36	Metals n.e.c.	1156.34	297910.56	0.00	0.02	643.32	275269.47	3546.64	1155572.00	0.00	1653825.25	134.36	45257.08
37	Metal products	891.92	229788.23	0.00	0.05	921.23	394186.78	1131.97	368820.50	0.00	1034384.25	793.85	267401.88
38	Motor vehicles and parts	200.46	51644.58	0.00	0.00	457.12	195597.83	16380.52	5337125.00	0.00	2210595.25	199.32	67138.99
39	Transport equipment n.e.c.	153.13	39451.67	0.00	0.00	1.49	637.20	4677.12	1523907.00	0.00	409857.25	33.21	11185.09
40	Electronic equipment	7.67	1975.90	0.00	0.00	395.91	169407.06	1568.45	511033.78	0.00	2041803.13	893.49	300962.13
41	Machinery and equipment n.e.c.	3.59	926.11	0.00	0.01	11.19	4788.09	1409.21	459149.66	0.00	1393779.25	675.25	227452.72
42	Manufactures n.e.c.	41.78	10763.95	0.00	0.03	153.73	65777.62	10343.31	3370072.50	0.00	1342569.50	237.38	79958.77
43	Electricity	251900.78	64897820.00	36537.02	12020271.00	87630.35	37496124.00	85031.46	27705078.00	0.00	9967767.00	0.00	0.26
44	Gas manufacture, distribution	821.01	211519.64	0.01	1.87	0.00	316888.41	3215.19	1047576.38	0.00	153.12	0.00	0.06
45	Water	11.75	3028.40	0.00	0.20	1293.85	553626.06	105.67	34427.97	0.00	1147253.50	5.47	1843.34
46	Construction	122.81	31640.06	0.00	0.02	272.27	116501.45	14715.88	4794749.00	0.00	112414.59	149.11	50227.35
47	Trade	0.31	80.39	0.00	0.04	3.71	1587.06	6951.88	2265071.50	0.00	1275670.13	28.29	9529.61
48	Transport n.e.c.	0.05	11.72	0.00	0.00	1.25	534.85	150963.67	49187212.00	0.00	692678.13	1.78	599.52
49	Water transport	0.00	0.00	0.00	0.00	0.01	5.10	9630.70	3137887.50	0.00	5057.14	0.14	48.57
50	Air Transport	0.00	0.00	0.00	0.00	0.08	35.04	15566.28	5071830.00	0.00	9250.09	0.13	44.10
51	Communication	0.01	1.70	0.00	0.00	2.56	1095.43	1064.30	346773.19	0.00	838926.25	14.71	4953.51
52	Financial services n.e.c.	0.00	1.15	0.00	0.00	2.91	1244.78	663.12	216058.56	0.00	518686.47	26.97	9084.74
53	Insurance	0.00	0.33	0.00	0.00	0.53	226.67	254.55	82936.26	0.00	297908.75	22.94	7725.44
54	Business services n.e.c.	82.06	21140.91	0.00	0.74	3249.22	1390308.25	11905.15	3878954.00	0.00	3720321.25	68.91	23212.83
55	Recreational and other services	260.91	67218.04	0.00	0.12	740.19	316718.00	7732.16	2519305.50	0.00	3616694.00	213.17	71803.48
56	Public Admin., Defense, Education, Health	3253.16	838119.38	0.00	0.02	521.82	223280.72	27967.97	9112566.00	0.00	9533242.00	5956.11	2006259.50
57	Dwellings	0.00	0.04	0.00	0.01	0.00	0.00	1.39	454.22	0.00	38.91	0.07	22.39
58	Households	81.26	20934.77	0.00	0.16	7857.08	3361963.75	177323.50	57775808.00	0.00	21290428.00	13868.56	4671489.50
	Total	337238.24	86930968.77	44053.09	228478813.17	114947.58	49501762.00	679549.39	261875744.70	0.00	88479016.52	26825.91	9036048.34

Table 3b. Significance of CO₂ emissions from emitters (%): Japan, 1997

No. Emitters/users	Energy commodities					
	Coal	Crude oil	Natural gas	Petroleum products	Electricity	Gas
1 Paddy rice	0.00	0.00	0.00	0.19	0.00	0.00
2 Wheat	0.00	0.00	0.00	0.01	0.00	0.00
3 Cereal grains n.e.c.	0.00	0.00	0.00	0.00	0.00	0.00
4 Vegetables, fruit, nuts	0.00	0.00	0.00	0.36	0.00	0.00
5 Oil seeds	0.00	0.00	0.00	0.00	0.00	0.00
6 Sugar cane, sugar beet	0.00	0.00	0.00	0.00	0.00	0.00
7 Plant-based fibers	0.00	0.00	0.00	0.00	0.00	0.00
8 Crops n.e.c.	0.00	0.00	0.00	0.29	0.00	0.00
9 Bovine cattle, sheep and goats, horses	0.00	0.00	0.00	0.00	0.00	0.00
10 Animal products n.e.c.	0.00	0.00	0.00	0.01	0.00	0.00
11 Raw milk	0.00	0.00	0.00	0.01	0.00	0.00
12 Wool, silk-worm cocoons	0.00	0.00	0.00	0.00	0.00	0.00
13 Forestry	0.00	0.00	0.00	0.14	0.00	0.00
14 Fishing	0.00	0.00	0.00	1.80	0.00	0.00
15 Coal	0.00	0.00	0.00	0.00	0.00	0.00
16 Oil	0.00	0.00	0.00	0.00	0.00	0.00
17 Gas	0.00	0.00	0.00	0.00	0.00	0.00
18 Minerals n.e.c.	0.01	0.00	0.03	0.13	0.00	0.00
19 Bovine meat prods	0.00	0.00	0.00	0.00	0.00	0.00
20 Meat products n.e.c.	0.00	0.00	0.01	0.01	0.00	0.00
21 Vegetable oils and fats	0.00	0.00	0.00	0.00	0.00	0.00
22 Dairy products	0.00	0.00	0.01	0.04	0.00	0.00
23 Processed rice	0.00	0.00	0.00	0.01	0.00	0.00
24 Sugar	0.00	0.00	0.00	0.04	0.00	0.01
25 Food products n.e.c.	0.00	0.00	0.05	0.30	0.00	0.06
26 Beverages and tobacco products	0.02	0.00	0.03	0.12	0.00	0.03
27 Textiles	0.00	0.00	0.01	0.15	0.00	0.01
28 Wearing apparel	0.01	0.00	0.00	0.31	0.00	0.02
29 Leather products	0.00	0.00	0.00	0.02	0.00	0.00
30 Wood products	0.00	0.00	0.02	0.39	0.00	0.01
31 Paper products, publishing	0.42	0.00	0.02	0.66	0.00	0.11
32 Petroleum, coal products	0.00	0.00	0.00	3.38	0.00	0.00
33 Chemical, rubber, plastic products	0.26	0.62	0.29	0.65	0.00	0.01
34 Mineral products n.e.c.	1.94	0.00	0.05	0.88	0.00	0.02
35 Ferrous metals	3.84	0.00	0.37	0.68	0.00	0.02
36 Metals n.e.c.	0.10	0.00	0.05	0.29	0.00	0.01
37 Metal products	0.07	0.00	0.08	0.09	0.00	0.07
38 Motor vehicles and parts	0.02	0.00	0.04	1.36	0.00	0.02
39 Transport equipment n.e.c.	0.01	0.00	0.00	0.39	0.00	0.00
40 Electronic equipment	0.00	0.00	0.03	0.13	0.00	0.07
41 Machinery and equipment n.e.c.	0.00	0.00	0.00	0.12	0.00	0.06
42 Manufactures n.e.c.	0.00	0.00	0.01	0.86	0.00	0.02
43 Electricity	20.95	3.04	7.29	7.07	0.00	0.00
44 Gas manufacture, distribution	0.07	0.00	0.00	0.27	0.00	0.00
45 Water	0.00	0.00	0.11	0.01	0.00	0.00

....continued

Table 3b (continued)

No. Emitters/users	Energy commodities					
	Coal	Crude oil	Natural gas	Petroleum products	Electricity	Gas
46 Construction	0.01	0.00	0.02	1.22	0.00	0.01
47 Trade	0.00	0.00	0.00	0.58	0.00	0.00
48 Transport n.e.c.	0.00	0.00	0.00	12.55	0.00	0.00
49 Water transport	0.00	0.00	0.00	0.80	0.00	0.00
50 Air Transport	0.00	0.00	0.00	1.29	0.00	0.00
51 Communication	0.00	0.00	0.00	0.09	0.00	0.00
52 Financial services n.e.c.	0.00	0.00	0.00	0.06	0.00	0.00
53 Insurance	0.00	0.00	0.00	0.02	0.00	0.00
54 Business services n.e.c.	0.01	0.00	0.27	0.99	0.00	0.01
55 Recreational and other services	0.02	0.00	0.06	0.64	0.00	0.02
56 Public Admin., Defense, Education, Health	0.27	0.00	0.04	2.33	0.00	0.50
57 Dwellings	0.00	0.00	0.00	0.00	0.00	0.00
58 Households	0.01	0.00	0.65	14.74	0.00	1.15
Sub-total	28.04	3.66	9.56	56.51	0.00	2.23
Total				100.00		

Table 4a. CO₂ emissions and fossil fuel consumption of Taiwan, 1997

No.	Emitters/users	Energy commodities											
		Coal		Crude oil		Natural gas		Petroleum products		Electricity		Gas	
		CO ₂	Usage	CO ₂	Usage	CO ₂	Usage	CO ₂	Usage	CO ₂	Usage	CO ₂	Usage
1	Paddy rice	0.00	0.00	0.00	0.00	0.00	0.02	418.66	136409.80	0.00	16474.97	10.12	3409.66
2	Wheat	0.00	0.00	0.00	0.00	0.00	0.09	0.00	0.96	0.00	1.08	0.00	0.19
3	Cereal grains n.e.c.	0.00	0.00	0.00	0.00	0.00	1.01	13.81	4500.00	0.00	1000.67	0.02	5.77
4	Vegetables, fruit, nuts	0.00	0.00	0.00	0.00	0.01	5.32	304.49	99208.02	0.00	24702.13	0.19	64.36
5	Oil seeds	0.00	0.00	0.00	0.00	0.00	0.12	8.89	2896.46	0.00	614.34	0.00	0.90
6	Sugar cane, sugar beet	0.00	0.00	0.00	0.00	0.00	0.17	27.30	8895.97	0.00	1574.30	0.00	1.39
7	Plant-based fibers	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.86	0.00	0.27	0.00	0.26
8	Crops n.e.c.	0.00	0.00	0.00	0.00	0.00	0.34	47.07	15335.35	0.00	3353.57	0.02	7.89
9	Bovine cattle, sheep and goats, horses	0.00	0.00	0.00	0.00	0.00	1.27	370.49	120712.90	0.00	14914.09	18.56	6253.06
10	Animal products n.e.c.	0.00	0.00	0.00	0.00	0.04	16.63	4.98	1622.42	0.00	55628.04	17.40	5860.02
11	Raw milk	0.00	0.00	0.00	0.00	0.00	0.89	0.94	306.67	0.00	7694.56	0.01	2.71
12	Wool, silk-worm cocoons	0.00	0.00	0.00	0.00	0.00	1.30	0.03	8.23	0.00	1.20	0.00	1.39
13	Forestry	0.00	0.00	0.00	0.00	0.00	0.10	9.16	2983.74	0.00	115.72	17.61	5933.41
14	Fishing	0.00	0.00	0.00	0.00	0.00	0.33	1268.20	413205.30	0.00	71123.52	0.06	19.99
15	Coal	0.00	0.63	0.00	0.00	0.00	0.00	0.00	0.20	0.00	0.81	0.00	0.00
16	Oil	0.00	0.00	0.00	0.01	0.00	0.00	0.07	23.98	0.00	0.25	0.00	0.00
17	Gas	0.00	0.00	0.00	0.00	110.90	47452.14	0.00	0.01	0.00	6.51	0.00	0.05
18	Minerals n.e.c.	0.12	31.87	0.00	0.00	0.00	0.86	121.29	39518.52	0.00	16488.11	0.35	117.31
19	Bovine meat prods	0.00	0.00	0.00	0.00	0.00	0.00	11.87	3866.79	0.00	7099.04	0.00	0.01
20	Meat products n.e.c.	0.01	3.04	0.00	0.00	3.34	1430.86	104.98	34204.05	0.00	45435.28	0.23	77.60
21	Vegetable oils and fats	0.07	18.08	0.00	0.00	0.00	0.02	104.21	33954.00	0.00	11956.31	0.00	0.17
22	Dairy products	0.00	0.00	0.00	0.00	0.00	0.04	36.27	11817.15	0.00	10847.67	0.02	5.13
23	Processed rice	0.00	0.00	0.00	0.00	0.00	0.01	30.67	9992.09	0.00	8741.76	0.00	0.09
24	Sugar	0.00	0.00	0.00	0.00	0.00	0.01	21.83	7111.83	0.00	10799.44	0.00	0.10
25	Food products n.e.c.	0.06	15.76	0.00	0.00	16.67	7133.56	667.21	217392.60	0.00	144567.30	0.55	183.71
26	Beverages and tobacco products	0.00	0.01	0.00	0.00	3.80	1626.27	321.08	104613.40	0.00	32635.16	0.10	34.72
27	Textiles	173.09	44594.67	0.00	0.00	16.68	7137.34	2981.66	971488.20	0.00	656569.50	23.79	8011.93
28	Wearing apparel	7.75	1996.38	0.00	0.00	0.00	1.22	459.00	149553.50	0.00	51563.88	9.56	3219.02
29	Leather products	0.05	13.45	0.00	0.00	0.00	0.80	250.24	81534.41	0.00	36683.00	3.29	1108.44

....continued

Table 4a (continued)

No.	Emitters/users	Energy commodities											
		Coal		Crude oil		Natural gas		Petroleum products		Electricity		Gas	
		CO ₂	Usage	CO ₂	Usage	CO ₂	Usage	CO ₂	Usage	CO ₂	Usage	CO ₂	Usage
30	Wood products	0.00	0.00	0.00	0.00	0.00	1.42	795.49	259189.10	0.00	51953.05	0.02	7.95
31	Paper products, publishing	1220.26	314379.80	0.00	0.00	0.10	41.24	1246.06	405991.90	0.00	356789.30	0.01	1.76
32	Petroleum, coal products	0.00	3884.08	0.00	32472262.00	16.31	6980.30	5371.45	1750134.00	0.00	229.04	0.00	0.07
33	Chemical, rubber, plastic products	4109.50	1058742.00	0.00	0.39	96.46	433386.70	8065.01	8520190.00	0.00	1702975.00	4.91	1654.23
34	Mineral products n.e.c.	7400.46	1906598.00	0.00	0.00	585.29	250437.70	1802.91	587428.30	0.00	401101.30	26.91	9063.19
35	Ferrous metals	9792.82	2522949.00	0.00	0.01	245.15	104897.50	2051.12	668298.40	0.00	838481.10	14.29	4813.99
36	Metals n.e.c.	0.03	7.22	0.00	0.00	0.01	5.61	399.18	130062.40	0.00	35697.76	0.03	11.51
37	Metal products	0.26	66.93	0.00	0.01	1.16	495.91	43.16	14061.20	0.00	283356.10	1.44	485.96
38	Motor vehicles and parts	0.01	2.05	0.00	0.00	0.09	38.48	50.31	16393.11	0.00	63960.03	0.01	3.62
39	Transport equipment n.e.c.	0.00	0.05	0.00	0.00	0.08	32.92	47.38	15436.85	0.00	59610.57	0.01	4.32
40	Electronic equipment	0.00	0.00	0.00	0.00	85.02	36380.39	35.93	11707.73	0.00	522059.00	0.79	266.42
41	Machinery and equipment n.e.c.	0.23	59.31	0.00	0.00	41.03	17557.09	72.00	23458.07	0.00	425496.60	2.14	719.64
42	Manufactures n.e.c.	0.00	0.23	0.00	0.00	0.05	19.31	893.41	291092.10	0.00	174779.50	0.06	21.83
43	Electricity	66585.96	17154706.00	0.00	0.77	5443.36	2329157.00	19145.94	6238160.00	0.00	1892566.00	0.31	104.47
44	Gas manufacture, distribution	0.00	0.07	0.00	0.12	0.00	319050.80	4.30	1400.46	0.00	3.67	2.54	856.96
45	Water	0.00	0.08	0.00	0.01	0.21	89.30	6.86	2234.00	0.00	108179.60	0.38	128.35
46	Construction	0.00	0.03	0.00	0.00	0.01	2.55	531.64	173219.80	0.00	43892.04	0.00	1.55
47	Trade	0.00	0.17	0.00	0.00	1.91	818.64	5278.49	1719844.00	0.00	48769.02	2.19	739.19
48	Transport n.e.c.	0.00	0.11	0.00	0.00	0.00	0.00	18011.14	5868418.00	0.00	7358.51	0.04	12.14
49	Water transport	0.09	22.73	0.00	0.00	0.00	0.00	1267.66	413032.30	0.00	205.97	0.00	0.54
50	Air Transport	0.00	0.00	0.00	0.00	0.00	0.00	6304.48	2054137.00	0.00	1671.65	0.01	3.19
51	Communication	0.00	0.00	0.00	0.00	0.00	0.37	26.31	8571.58	0.00	135862.20	1.40	471.11
52	Financial services n.e.c.	0.00	0.00	0.00	0.00	0.00	0.40	25.82	8414.20	0.00	139989.70	19.99	6734.16
53	Insurance	0.00	0.00	0.00	0.00	0.00	0.09	12.95	4219.02	0.00	39020.67	4.36	1469.15
54	Business services n.e.c.	0.00	0.13	0.00	0.05	0.88	375.18	305.61	99573.33	0.00	253036.70	45.86	15448.35
55	Recreational and other services	0.00	0.11	0.00	0.01	0.15	63.61	104.57	34070.65	0.00	361179.80	136.50	45977.07
56	Public Admin., Defense, Education, Health	0.00	0.04	0.00	0.00	0.15	65.07	1417.23	461764.90	0.00	1547769.00	188.21	63395.33
57	Dwellings	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.05	0.00	0.04
58	Households	0.00	0.25	0.00	0.01	9.01	3854.70	18900.35	6158140.00	0.00	2455093.00	1732.79	583672.90
	Total	89290.77	23008092.28	0.00	32472263.39	6677.87	3568563.02	99801.16	38409799.85	0.00	13181678.41	2287.08	770388.27

Table 4b. Significance of CO₂ emissions from emitters (%): Taiwan, 1997

No. Emitters/users	Energy commodities						
	Coal	Crude oil	Natural gas	Petroleum products	Electricity	Gas	
1	Paddy rice	0.00	0.00	0.00	0.21	0.00	0.01
2	Wheat	0.00	0.00	0.00	0.00	0.00	0.00
3	Cereal grains n.e.c.	0.00	0.00	0.00	0.01	0.00	0.00
4	Vegetables, fruit, nuts	0.00	0.00	0.00	0.15	0.00	0.00
5	Oil seeds	0.00	0.00	0.00	0.00	0.00	0.00
6	Sugar cane, sugar beet	0.00	0.00	0.00	0.01	0.00	0.00
7	Plant-based fibers	0.00	0.00	0.00	0.00	0.00	0.00
8	Crops n.e.c.	0.00	0.00	0.00	0.02	0.00	0.00
9	Bovine cattle, sheep and goats, horses	0.00	0.00	0.00	0.19	0.00	0.01
10	Animal products n.e.c.	0.00	0.00	0.00	0.00	0.00	0.01
11	Raw milk	0.00	0.00	0.00	0.00	0.00	0.00
12	Wool, silk-worm cocoons	0.00	0.00	0.00	0.00	0.00	0.00
13	Forestry	0.00	0.00	0.00	0.00	0.00	0.01
14	Fishing	0.00	0.00	0.00	0.64	0.00	0.00
15	Coal	0.00	0.00	0.00	0.00	0.00	0.00
16	Oil	0.00	0.00	0.00	0.00	0.00	0.00
17	Gas	0.00	0.00	0.06	0.00	0.00	0.00
18	Minerals n.e.c.	0.00	0.00	0.00	0.06	0.00	0.00
19	Bovine meat prods	0.00	0.00	0.00	0.01	0.00	0.00
20	Meat products n.e.c.	0.00	0.00	0.00	0.05	0.00	0.00
21	Vegetable oils and fats	0.00	0.00	0.00	0.05	0.00	0.00
22	Dairy products	0.00	0.00	0.00	0.02	0.00	0.00
23	Processed rice	0.00	0.00	0.00	0.02	0.00	0.00
24	Sugar	0.00	0.00	0.00	0.01	0.00	0.00
25	Food products n.e.c.	0.00	0.00	0.01	0.34	0.00	0.00
26	Beverages and tobacco products	0.00	0.00	0.00	0.16	0.00	0.00
27	Textiles	0.09	0.00	0.01	1.51	0.00	0.01
28	Wearing apparel	0.00	0.00	0.00	0.23	0.00	0.00
29	Leather products	0.00	0.00	0.00	0.13	0.00	0.00
30	Wood products	0.00	0.00	0.00	0.40	0.00	0.00
31	Paper products, publishing	0.62	0.00	0.00	0.63	0.00	0.00
32	Petroleum, coal products	0.00	0.00	0.01	2.71	0.00	0.00
33	Chemical, rubber, plastic products	2.07	0.00	0.05	4.07	0.00	0.00
34	Mineral products n.e.c.	3.74	0.00	0.30	0.91	0.00	0.01
35	Ferrous metals	4.94	0.00	0.12	1.04	0.00	0.01
36	Metals n.e.c.	0.00	0.00	0.00	0.20	0.00	0.00
37	Metal products	0.00	0.00	0.00	0.02	0.00	0.00
38	Motor vehicles and parts	0.00	0.00	0.00	0.03	0.00	0.00
39	Transport equipment n.e.c.	0.00	0.00	0.00	0.02	0.00	0.00
40	Electronic equipment	0.00	0.00	0.04	0.02	0.00	0.00
41	Machinery and equipment n.e.c.	0.00	0.00	0.02	0.04	0.00	0.00
42	Manufactures n.e.c.	0.00	0.00	0.00	0.45	0.00	0.00
43	Electricity	33.62	0.00	2.75	9.67	0.00	0.00
44	Gas manufacture, distribution	0.00	0.00	0.00	0.00	0.00	0.00
45	Water	0.00	0.00	0.00	0.00	0.00	0.00

....continued

Table 4b (continued)

No. Emitters/users	Energy commodities					
	Coal	Crude oil	Natural gas	Petroleum products	Electricity	Gas
46 Construction	0.00	0.00	0.00	0.27	0.00	0.00
47 Trade	0.00	0.00	0.00	2.67	0.00	0.00
48 Transport n.e.c.	0.00	0.00	0.00	9.09	0.00	0.00
49 Water transport	0.00	0.00	0.00	0.64	0.00	0.00
50 Air Transport	0.00	0.00	0.00	3.18	0.00	0.00
51 Communication	0.00	0.00	0.00	0.01	0.00	0.00
52 Financial services n.e.c.	0.00	0.00	0.00	0.01	0.00	0.01
53 Insurance	0.00	0.00	0.00	0.01	0.00	0.00
54 Business services n.e.c.	0.00	0.00	0.00	0.15	0.00	0.02
55 Recreational and other services	0.00	0.00	0.00	0.05	0.00	0.07
56 Public Admin., Defense, Education, Health	0.00	0.00	0.00	0.72	0.00	0.10
57 Dwellings	0.00	0.00	0.00	0.00	0.00	0.00
58 Households	0.00	0.00	0.00	9.54	0.00	0.87
Sub-total	45.08	0.00	3.37	50.39	0.00	1.15
Total				100.00		

Table 5a. CO₂ emissions and fossil fuel consumption of India, 1997

No.	Emitters/users	Energy commodities											
		Coal		Crude oil		Natural gas		Petroleum products		Electricity		Gas	
		CO ₂	Usage	CO ₂	Usage	CO ₂	Usage	CO ₂	Usage	CO ₂	Usage	CO ₂	Usage
1	Paddy rice	0.06	15.46	0.00	0.00	0.00	0.61	324.07	105588.59	0.00	1996553.00	2.04	688.39
2	Wheat	15.20	3916.11	0.00	0.00	0.45	192.05	110.49	36000.70	0.00	2652524.25	4.34	1460.63
3	Cereal grains n.e.c.	0.69	179.01	0.00	0.16	37.63	16101.82	65.95	21487.87	0.00	375253.09	6.07	2043.99
4	Vegetables, fruit, nuts	1.49	384.05	0.00	0.33	77.77	33276.64	140.65	45827.76	0.00	801782.50	12.52	4217.03
5	Oil seeds	1.37	353.73	0.00	0.32	75.99	32513.74	129.84	42305.85	0.00	740124.25	5.68	1912.79
6	Sugar cane, sugar beet	0.95	243.58	0.00	0.24	37.47	16033.46	89.62	29201.25	0.00	510811.56	4.41	1484.69
7	Plant-based fibers	0.66	169.02	0.00	0.17	39.44	16877.36	62.53	20373.80	0.00	356365.84	3.09	1040.30
8	Crops n.e.c.	0.81	209.23	0.00	0.18	43.03	18410.95	77.25	25169.01	0.00	440469.59	9.16	3083.88
9	Bovine cattle, sheep and goats, horses	0.00	0.01	0.00	0.00	0.08	34.18	0.13	43.05	0.00	255.07	3.47	1167.86
10	Animal products n.e.c.	0.00	0.03	0.00	0.00	0.32	136.73	0.07	21.80	0.00	368.95	6.78	2282.30
11	Raw milk	0.01	3.21	0.00	0.00	0.57	244.77	0.21	68.29	0.00	675.98	10.72	3611.04
12	Wool, silk-worm cocoons	0.00	0.00	0.00	0.00	0.01	3.68	0.00	0.32	0.00	2.45	0.03	10.76
13	Forestry	0.00	0.03	0.00	0.00	0.29	124.18	73.37	23905.97	0.00	56081.80	10.75	3621.57
14	Fishing	0.00	0.00	0.00	0.00	0.01	2.26	127.59	41570.92	0.00	12796.86	1.47	496.48
15	Coal	13.51	3481.05	0.00	0.00	0.00	0.00	2.60	848.76	0.00	491.10	0.00	0.06
16	Oil	0.00	0.00	0.06	20.21	0.02	9.55	1.25	407.93	0.00	22.46	0.00	0.02
17	Gas	0.00	0.20	0.02	7.61	19.51	8349.31	0.53	171.45	0.00	9.42	0.13	43.10
18	Minerals n.e.c.	1618.74	417039.69	0.00	0.00	0.36	155.90	2622.43	854442.63	0.00	1434857.63	2.28	767.61
19	Bovine meat prods	0.63	162.51	0.00	0.00	0.02	8.50	5.20	1692.82	0.00	4108.95	1.23	413.88
20	Meat products n.e.c.	0.12	30.15	0.00	0.00	0.00	0.38	0.34	111.33	0.00	233.21	0.07	22.07
21	Vegetable oils and fats	9246.13	2382103.50	0.12	39.54	38.03	16271.62	893.31	291060.84	0.00	268801.56	0.39	130.81
22	Dairy products	2070.16	533339.88	0.03	8.89	8.57	3667.25	200.04	65176.41	0.00	60240.74	0.03	11.17
23	Processed rice	9.99	2573.77	0.00	0.00	0.01	3.43	21.24	6919.28	0.00	15591.24	6.62	2228.62
24	Sugar	13265.24	3417557.50	0.17	56.77	54.66	23386.67	1282.67	417921.28	0.00	385811.91	0.73	244.92
25	Food products n.e.c.	5208.57	1341897.13	0.07	22.25	21.57	9229.63	503.38	164011.66	0.00	151381.88	0.08	26.46
26	Beverages and tobacco products	6939.72	1787897.25	0.09	29.70	28.66	12263.93	670.76	218547.84	0.00	201759.73	0.30	102.66
27	Textiles	2443.58	629545.75	0.02	7.94	3.85	1648.27	2865.46	933628.88	0.00	921982.88	0.97	325.57
28	Wearing apparel	140.27	36139.17	0.04	14.78	7.23	3095.31	493.45	160775.89	0.00	72181.51	0.06	20.45
29	Leather products	36.38	9372.81	0.00	0.00	0.00	0.03	301.25	98154.64	0.00	23421.99	0.01	4.92

....continued

Table 5a (continued)

No.	Emitters/users	Energy commodities											
		Coal		Crude oil		Natural gas		Petroleum products		Electricity		Gas	
		CO ₂	Usage	CO ₂	Usage	CO ₂	Usage	CO ₂	Usage	CO ₂	Usage	CO ₂	Usage
30	Wood products	850.88	219215.28	0.00	0.08	0.05	21.33	39.80	12969.07	0.00	73316.56	1.00	337.60
31	Paper products, publishing	6371.17	1641419.63	0.00	0.00	0.23	98.15	320.15	104313.36	0.00	969165.69	10.13	3411.40
32	Petroleum, coal products	0.00	28757.21	0.00	68596408.00	38.80	16603.18	14049.21	4577533.00	0.00	94.63	0.00	0.66
33	Chemical, rubber, plastic products	4882.19	1257810.75	2043.41	672259.19	17941.02	8278379.00	20248.31	13661863.00	0.00	681550.38	1465.75	493723.78
34	Mineral products n.e.c.	19102.93	4921534.00	0.00	0.43	12.94	5537.11	2499.01	814231.88	0.00	700315.94	106.40	35840.14
35	Ferrous metals	42142.58	10857296.00	0.41	133.27	137.76	58945.00	2913.75	949362.88	0.00	1144448.00	1.18	397.15
36	Metals n.e.c.	5211.06	1342539.25	0.12	38.16	48.28	20656.98	602.56	196326.88	0.00	1214643.50	0.41	138.27
37	Metal products	355.85	91677.89	0.03	11.28	4.25	1817.17	244.08	79527.45	0.00	118365.43	0.03	10.45
38	Motor vehicles and parts	772.48	199015.52	0.00	0.09	0.06	26.65	412.88	134524.61	0.00	417809.56	7.86	2645.98
39	Transport equipment n.e.c.	10703.66	2757611.00	0.00	0.08	0.01	6.06	579.90	188942.44	0.00	390677.41	2.27	763.47
40	Electronic equipment	16.80	4327.27	0.01	4.07	1.53	655.25	121.62	39625.00	0.00	77069.41	0.01	2.08
41	Machinery and equipment n.e.c.	3829.86	986695.31	0.39	129.79	49.00	20968.45	1624.80	529395.63	0.00	865357.50	0.10	33.62
42	Manufactures n.e.c.	28055.71	7228060.00	0.25	83.01	11.91	5094.57	878.10	286104.81	0.00	1168201.63	0.11	37.28
43	Electricity	428666.53	110438408.00	15.30	5034.51	9774.79	4182531.00	7928.12	2583151.00	0.00	9731706.00	9046.66	3047278.25
44	Gas manufacture, distribution	0.00	1.22	6.10	2007.59	0.00	1148753.50	0.16	51.17	0.00	5.03	1.43	482.75
45	Water	0.01	3.57	0.00	0.01	0.00	0.22	37.24	12133.02	0.00	543453.75	0.05	17.82
46	Construction	2970.03	765175.44	0.04	14.11	1.34	574.54	4149.19	1351895.25	0.00	2569848.50	0.04	15.11
47	Trade	96.06	24748.69	0.15	49.28	0.07	29.57	1046.35	340924.03	0.00	396803.16	1.18	395.81
48	Transport n.e.c.	98.57	25393.85	0.00	0.00	0.00	0.00	57466.23	18723736.00	0.00	229480.66	0.00	0.78
49	Water transport	0.00	0.00	0.00	0.00	0.00	0.00	10018.83	3264349.00	0.00	18290.71	0.00	0.00
50	Air Transport	0.00	0.01	0.00	0.00	0.00	0.00	6634.64	2161709.75	0.00	12120.91	0.00	0.02
51	Communication	0.00	0.01	0.00	0.00	0.00	0.11	41.37	13479.38	0.00	147865.73	0.04	12.27
52	Financial services n.e.c.	0.00	0.00	0.00	0.00	0.00	0.03	29.76	9696.72	0.00	555834.06	0.08	25.32
53	Insurance	0.00	0.00	0.00	0.00	0.00	0.02	49.19	16028.78	0.00	66137.42	0.02	5.92
54	Business services n.e.c.	105.71	27234.74	3.07	1009.53	214.27	91683.53	299.80	97681.42	0.00	1001432.44	4.50	1515.14
55	Recreational and other services	30.37	7824.56	0.88	289.63	61.46	26298.84	85.97	28009.99	0.00	296110.38	1.88	634.17
56	Public Admin., Defense, Education, Health	0.00	0.80	0.00	0.00	0.00	1.19	66.94	21809.27	0.00	149191.14	5.06	1705.08
57	Dwellings	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.07	0.00	0.07
58	Households	100.90	25994.83	0.00	0.02	0.00	1.90	107206.84	34930292.00	0.00	4950780.00	405.59	136619.61
	Total	595377.63	153417358.67	2070.78	69277681.22	28793.32	14070725.56	250660.48	88735103.65	0.00	39975037.00	11155.21	3757514.03

Table 5b. Significance of CO₂ emissions from emitters (%): India, 1997

No. Emitters/users	Energy commodities					
	Coal	Crude oil	Natural gas	Petroleum products	Electricity	Gas
1 Paddy rice	0.00	0.00	0.00	0.04	0.00	0.00
2 Wheat	0.00	0.00	0.00	0.01	0.00	0.00
3 Cereal grains n.e.c.	0.00	0.00	0.00	0.01	0.00	0.00
4 Vegetables, fruit, nuts	0.00	0.00	0.01	0.02	0.00	0.00
5 Oil seeds	0.00	0.00	0.01	0.01	0.00	0.00
6 Sugar cane, sugar beet	0.00	0.00	0.00	0.01	0.00	0.00
7 Plant-based fibers	0.00	0.00	0.00	0.01	0.00	0.00
8 Crops n.e.c.	0.00	0.00	0.00	0.01	0.00	0.00
9 Bovine cattle, sheep and goats, horses	0.00	0.00	0.00	0.00	0.00	0.00
10 Animal products n.e.c.	0.00	0.00	0.00	0.00	0.00	0.00
11 Raw milk	0.00	0.00	0.00	0.00	0.00	0.00
12 Wool, silk-worm cocoons	0.00	0.00	0.00	0.00	0.00	0.00
13 Forestry	0.00	0.00	0.00	0.01	0.00	0.00
14 Fishing	0.00	0.00	0.00	0.01	0.00	0.00
15 Coal	0.00	0.00	0.00	0.00	0.00	0.00
16 Oil	0.00	0.00	0.00	0.00	0.00	0.00
17 Gas	0.00	0.00	0.00	0.00	0.00	0.00
18 Minerals n.e.c.	0.18	0.00	0.00	0.30	0.00	0.00
19 Bovine meat prods	0.00	0.00	0.00	0.00	0.00	0.00
20 Meat products n.e.c.	0.00	0.00	0.00	0.00	0.00	0.00
21 Vegetable oils and fats	1.04	0.00	0.00	0.10	0.00	0.00
22 Dairy products	0.23	0.00	0.00	0.02	0.00	0.00
23 Processed rice	0.00	0.00	0.00	0.00	0.00	0.00
24 Sugar	1.49	0.00	0.01	0.14	0.00	0.00
25 Food products n.e.c.	0.59	0.00	0.00	0.06	0.00	0.00
26 Beverages and tobacco products	0.78	0.00	0.00	0.08	0.00	0.00
27 Textiles	0.28	0.00	0.00	0.32	0.00	0.00
28 Wearing apparel	0.02	0.00	0.00	0.06	0.00	0.00
29 Leather products	0.00	0.00	0.00	0.03	0.00	0.00
30 Wood products	0.10	0.00	0.00	0.00	0.00	0.00
31 Paper products, publishing	0.72	0.00	0.00	0.04	0.00	0.00
32 Petroleum, coal products	0.00	0.00	0.00	1.58	0.00	0.00
33 Chemical, rubber, plastic products	0.55	0.23	2.02	2.28	0.00	0.17
34 Mineral products n.e.c.	2.15	0.00	0.00	0.28	0.00	0.01
35 Ferrous metals	4.75	0.00	0.02	0.33	0.00	0.00
36 Metals n.e.c.	0.59	0.00	0.01	0.07	0.00	0.00
37 Metal products	0.04	0.00	0.00	0.03	0.00	0.00
38 Motor vehicles and parts	0.09	0.00	0.00	0.05	0.00	0.00
39 Transport equipment n.e.c.	1.21	0.00	0.00	0.07	0.00	0.00
40 Electronic equipment	0.00	0.00	0.00	0.01	0.00	0.00
41 Machinery and equipment n.e.c.	0.43	0.00	0.01	0.18	0.00	0.00
42 Manufactures n.e.c.	3.16	0.00	0.00	0.10	0.00	0.00
43 Electricity	48.27	0.00	1.10	0.89	0.00	1.02
44 Gas manufacture, distribution	0.00	0.00	0.00	0.00	0.00	0.00
45 Water	0.00	0.00	0.00	0.00	0.00	0.00

....continued

Table 5b (continued)

No. Emitters/users	Energy commodities					
	Coal	Crude oil	Natural gas	Petroleum products	Electricity	Gas
46 Construction	0.33	0.00	0.00	0.47	0.00	0.00
47 Trade	0.01	0.00	0.00	0.12	0.00	0.00
48 Transport n.e.c.	0.01	0.00	0.00	6.47	0.00	0.00
49 Water transport	0.00	0.00	0.00	1.13	0.00	0.00
50 Air Transport	0.00	0.00	0.00	0.75	0.00	0.00
51 Communication	0.00	0.00	0.00	0.00	0.00	0.00
52 Financial services n.e.c.	0.00	0.00	0.00	0.00	0.00	0.00
53 Insurance	0.00	0.00	0.00	0.01	0.00	0.00
54 Business services n.e.c.	0.01	0.00	0.02	0.03	0.00	0.00
55 Recreational and other services	0.00	0.00	0.01	0.01	0.00	0.00
56 Public Admin., Defense, Education, Health	0.00	0.00	0.00	0.01	0.00	0.00
57 Dwellings	0.00	0.00	0.00	0.00	0.00	0.00
58 Households	0.01	0.00	0.00	12.07	0.00	0.05
Sub-total	67.04	0.23	3.24	28.23	0.00	1.26
Total				100.00		

Table 6a. CO₂ emissions and fossil fuel consumption of Canada, 1997

No.	Emitters/users	Energy commodities											
		Coal		Crude oil		Natural gas		Petroleum products		Electricity		Gas	
		CO ₂	Usage	CO ₂	Usage	CO ₂	Usage	CO ₂	Usage	CO ₂	Usage	CO ₂	Usage
1	Paddy rice	0.00	0.01	0.00	0.00	0.00	0.00	0.44	142.27	0.00	41.75	0.00	1.00
2	Wheat	19.32	4977.98	0.00	0.00	171.82	73520.42	2620.83	853921.38	0.00	120924.75	6.06	2042.46
3	Cereal grains n.e.c.	0.00	0.44	0.00	0.00	99.49	42572.11	1627.73	530350.44	0.00	69752.09	45.98	15488.74
4	Vegetables, fruit, nuts	4.96	1278.28	0.00	0.00	185.33	79300.66	3077.61	1002752.06	0.00	121467.96	138.16	46536.96
5	Oil seeds	2.39	615.12	0.00	0.00	86.62	37064.45	1438.26	468615.94	0.00	63949.93	17.72	5969.31
6	Sugar cane, sugar beet	0.08	20.55	0.00	0.00	2.51	1074.89	41.64	13566.20	0.00	1842.36	0.51	171.81
7	Plant-based fibers	0.04	10.91	0.00	0.00	1.39	595.57	23.08	7520.23	0.00	1024.55	0.30	101.97
8	Crops n.e.c.	0.38	97.54	0.00	0.00	9.99	4274.42	165.20	53824.42	0.00	5973.88	7.71	2598.06
9	Bovine cattle, sheep and goats, horses	4.12	1061.22	0.00	0.00	37.42	16010.98	251.02	81788.36	0.00	60947.82	33.24	11197.09
10	Animal products n.e.c.	10.36	2670.07	0.00	0.00	92.43	39550.97	619.65	201895.86	0.00	151774.09	99.70	33582.61
11	Raw milk	16.11	4150.86	0.00	0.00	141.76	60659.41	951.80	310117.94	0.00	245052.88	141.47	47653.98
12	Wool, silk-worm cocoons	0.00	0.19	0.00	0.00	0.00	0.37	0.15	50.35	0.00	9.66	0.00	1.05
13	Forestry	0.00	0.60	0.00	0.00	64.32	27522.84	2651.91	864048.56	0.00	17987.00	27.20	9161.24
14	Fishing	0.00	0.01	0.00	0.00	29.93	12806.12	1147.60	373913.97	0.00	6121.98	6.61	2226.26
15	Coal	0.00	0.10	0.00	0.00	0.20	84.48	1.05	341.66	0.00	107.72	0.06	20.42
16	Oil	0.00	0.00	0.00	0.89	513.08	219541.86	1.20	392.60	0.00	548.71	1805.22	608071.00
17	Gas	0.00	0.12	0.00	0.35	779.24	333428.91	0.82	268.50	0.00	264.01	4754.11	1601374.50
18	Minerals n.e.c.	697.22	179626.19	0.00	0.00	4798.24	2053119.00	7455.93	2429302.50	0.00	2780096.00	1178.75	397050.22
19	Bovine meat prods	0.04	9.04	0.00	0.00	420.94	180117.81	46.02	14992.99	0.00	72558.73	246.05	82878.90
20	Meat products n.e.c.	0.19	49.41	0.00	0.00	175.24	74983.66	19.94	6495.27	0.00	28155.57	126.81	42714.13
21	Vegetable oils and fats	19.31	4975.87	0.00	0.00	623.65	266852.59	65.03	21188.15	0.00	85614.45	274.30	92396.15
22	Dairy products	3.94	1015.50	0.00	0.00	365.50	156394.27	67.99	22151.21	0.00	53530.01	152.57	51390.76
23	Processed rice	0.42	108.92	0.00	0.00	0.00	0.03	0.01	4.24	0.00	15.97	0.04	14.89
24	Sugar	1.29	333.36	0.00	0.00	11.68	4998.25	1.26	409.73	0.00	1597.08	5.52	1860.22
25	Food products n.e.c.	8.53	2197.42	0.00	0.00	1505.47	644174.56	164.65	53647.86	0.00	204677.55	477.15	160722.06
26	Beverages and tobacco products	7.44	1916.78	0.00	0.00	573.21	245271.19	57.89	18860.55	0.00	64390.16	211.01	71078.19
27	Textiles	16.40	4226.01	0.00	0.00	1195.26	511439.06	72.86	23738.04	0.00	221372.58	555.75	187200.63
28	Wearing apparel	1.69	436.47	0.00	0.00	151.52	64834.25	33.52	10920.44	0.00	56888.07	128.11	43153.27
29	Leather products	0.18	47.35	0.00	0.00	26.59	11377.21	11.65	3797.20	0.00	13056.84	18.29	6160.32

....continued

Table 6a (continued)

No.	Emitters/users	Energy commodities											
		Coal		Crude oil		Natural gas		Petroleum products		Electricity		Gas	
		CO ₂	Usage	CO ₂	Usage	CO ₂	Usage	CO ₂	Usage	CO ₂	Usage	CO ₂	Usage
30	Wood products	7.54	1942.31	0.00	0.00	1701.04	727855.75	823.79	268408.53	0.00	660756.94	919.80	309827.09
31	Paper products, publishing	215.00	55390.75	0.00	0.00	4855.84	2077765.25	4500.18	1466254.13	0.00	4841715.50	2276.21	766720.25
32	Petroleum, coal products	0.00	23.69	0.00	86696208.00	773.74	331077.44	21956.05	7153753.00	0.00	349.92	74.46	25081.86
33	Chemical, rubber, plastic products	1005.91	259154.27	0.01	4.81	9791.98	7506095.50	459.07	13342071.00	0.00	1628176.88	1933.28	651208.00
34	Mineral products n.e.c.	2288.08	589484.56	0.00	0.00	609.21	260676.69	509.44	165988.06	0.00	364591.53	126.58	42636.10
35	Ferrous metals	7105.27	1830548.38	0.00	0.00	3870.72	1656239.50	586.18	190988.78	0.00	796743.88	753.76	253897.19
36	Metals n.e.c.	1069.27	275479.44	0.00	0.00	1123.76	480843.19	553.00	180180.31	0.00	4046604.00	369.71	124532.59
37	Metal products	11.55	2974.53	0.00	0.00	1604.63	686606.38	206.71	67350.57	0.00	240012.72	670.44	225829.75
38	Motor vehicles and parts	82.39	21227.59	0.00	0.00	957.40	409660.31	446.19	145378.59	0.00	584726.38	286.78	96598.38
39	Transport equipment n.e.c.	84.09	21664.88	0.00	0.00	79.94	34204.80	84.72	27604.07	0.00	95480.43	17.47	5886.12
40	Electronic equipment	0.15	37.54	0.00	0.00	419.60	179540.59	45.90	14953.63	0.00	65945.06	154.40	52007.69
41	Machinery and equipment n.e.c.	2.93	754.01	0.00	0.00	1970.76	843267.50	341.91	111400.68	0.00	417596.44	788.77	265689.69
42	Manufactures n.e.c.	9.16	2360.96	0.00	0.00	348.25	149010.89	66.86	21785.71	0.00	67641.61	45.45	15310.50
43	Electricity	94162.64	24259352.00	1054.96	347070.53	9712.86	4156034.00	6504.17	2119198.00	0.00	5518916.50	18919.62	6372888.50
44	Gas manufacture, distribution	1.43	368.93	0.00	0.48	0.00	1690578.50	4.65	1514.24	0.00	116.35	5548.88	1869084.75
45	Water	250.22	64466.02	0.00	0.03	19.67	8417.70	108.24	35267.43	0.00	426983.91	273.23	92035.59
46	Construction	241.44	62202.46	0.00	0.00	1107.11	473720.16	2772.03	903185.75	0.00	85629.94	168.83	56867.98
47	Trade	0.02	5.77	0.28	92.08	4380.35	1874306.50	13573.53	4422547.50	0.00	279150.75	6376.76	2147948.75
48	Transport n.e.c.	0.04	9.96	0.05	15.09	2296.21	982522.56	57605.16	18769000.00	0.00	117904.75	650.66	219167.98
49	Water transport	0.00	0.07	0.00	0.40	82.98	35507.12	6694.29	2181145.25	0.00	1858.70	9.58	3225.80
50	Air Transport	0.00	0.94	0.01	2.87	389.92	166844.67	11122.28	3623878.50	0.00	6794.24	129.09	43483.05
51	Communication	0.01	1.94	0.00	0.00	159.06	68061.89	922.56	300588.53	0.00	1045091.19	1047.79	352939.19
52	Financial services n.e.c.	0.00	0.18	0.00	0.00	49.53	21191.64	841.12	274056.06	0.00	598807.63	1014.26	341643.53
53	Insurance	0.00	0.12	0.00	0.00	28.59	12235.39	346.74	112975.15	0.00	349021.88	324.28	109232.02
54	Business services n.e.c.	0.61	156.64	0.00	0.07	5324.78	2278419.00	6314.88	2057522.75	0.00	5179140.50	7484.15	2520965.00
55	Recreational and other services	2.06	531.67	0.00	0.03	3632.88	1554471.13	5283.95	1721623.00	0.00	1938857.13	2961.78	997647.44
56	Public Admin., Defense, Education, Health	0.04	10.28	0.00	0.00	1315.74	562992.06	3068.22	999692.81	0.00	785389.06	1945.82	655429.44
57	Dwellings	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.16	0.00	0.32	0.00	0.31
58	Households	79.62	20512.32	0.00	0.03	10404.92	4452160.00	72136.43	23503600.00	0.00	11757094.00	29694.88	10002432.00
	Total	107433.88	27678488.54	1055.31	87043395.66	79074.30	38841876.45	240494.99	91550931.11	0.00	46350842.29	95425.12	32143034.74

Table 6b. Significance of CO₂ emissions from emitters (%): Canada, 1997

No. Emitters/users	Energy commodities						
	Coal	Crude oil	Natural gas	Petroleum products	Electricity	Gas	
1	Paddy rice	0.00	0.00	0.00	0.00	0.00	0.00
2	Wheat	0.00	0.00	0.03	0.50	0.00	0.00
3	Cereal grains n.e.c.	0.00	0.00	0.02	0.31	0.00	0.01
4	Vegetables, fruit, nuts	0.00	0.00	0.04	0.59	0.00	0.03
5	Oil seeds	0.00	0.00	0.02	0.27	0.00	0.00
6	Sugar cane, sugar beet	0.00	0.00	0.00	0.01	0.00	0.00
7	Plant-based fibers	0.00	0.00	0.00	0.00	0.00	0.00
8	Crops n.e.c.	0.00	0.00	0.00	0.03	0.00	0.00
9	Bovine cattle, sheep and goats, horses	0.00	0.00	0.01	0.05	0.00	0.01
10	Animal products n.e.c.	0.00	0.00	0.02	0.12	0.00	0.02
11	Raw milk	0.00	0.00	0.03	0.18	0.00	0.03
12	Wool, silk-worm cocoons	0.00	0.00	0.00	0.00	0.00	0.00
13	Forestry	0.00	0.00	0.01	0.51	0.00	0.01
14	Fishing	0.00	0.00	0.01	0.22	0.00	0.00
15	Coal	0.00	0.00	0.00	0.00	0.00	0.00
16	Oil	0.00	0.00	0.10	0.00	0.00	0.34
17	Gas	0.00	0.00	0.15	0.00	0.00	0.91
18	Minerals n.e.c.	0.13	0.00	0.92	1.42	0.00	0.23
19	Bovine meat prods	0.00	0.00	0.08	0.01	0.00	0.05
20	Meat products n.e.c.	0.00	0.00	0.03	0.00	0.00	0.02
21	Vegetable oils and fats	0.00	0.00	0.12	0.01	0.00	0.05
22	Dairy products	0.00	0.00	0.07	0.01	0.00	0.03
23	Processed rice	0.00	0.00	0.00	0.00	0.00	0.00
24	Sugar	0.00	0.00	0.00	0.00	0.00	0.00
25	Food products n.e.c.	0.00	0.00	0.29	0.03	0.00	0.09
26	Beverages and tobacco products	0.00	0.00	0.11	0.01	0.00	0.04
27	Textiles	0.00	0.00	0.23	0.01	0.00	0.11
28	Wearing apparel	0.00	0.00	0.03	0.01	0.00	0.02
29	Leather products	0.00	0.00	0.01	0.00	0.00	0.00
30	Wood products	0.00	0.00	0.32	0.16	0.00	0.18
31	Paper products, publishing	0.04	0.00	0.93	0.86	0.00	0.43
32	Petroleum, coal products	0.00	0.00	0.15	4.19	0.00	0.01
33	Chemical, rubber, plastic products	0.19	0.00	1.87	0.09	0.00	0.37
34	Mineral products n.e.c.	0.44	0.00	0.12	0.10	0.00	0.02
35	Ferrous metals	1.36	0.00	0.74	0.11	0.00	0.14
36	Metals n.e.c.	0.20	0.00	0.21	0.11	0.00	0.07
37	Metal products	0.00	0.00	0.31	0.04	0.00	0.13
38	Motor vehicles and parts	0.02	0.00	0.18	0.09	0.00	0.05
39	Transport equipment n.e.c.	0.02	0.00	0.02	0.02	0.00	0.00
40	Electronic equipment	0.00	0.00	0.08	0.01	0.00	0.03
41	Machinery and equipment n.e.c.	0.00	0.00	0.38	0.07	0.00	0.15
42	Manufactures n.e.c.	0.00	0.00	0.07	0.01	0.00	0.01
43	Electricity	17.99	0.20	1.86	1.24	0.00	3.61
44	Gas manufacture, distribution	0.00	0.00	0.00	0.00	0.00	1.06
45	Water	0.05	0.00	0.00	0.02	0.00	0.05

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Table 6b (continued)

No. Emitters/users	Energy commodities					
	Coal	Crude oil	Natural gas	Petroleum products	Electricity	Gas
46 Construction	0.05	0.00	0.21	0.53	0.00	0.03
47 Trade	0.00	0.00	0.84	2.59	0.00	1.22
48 Transport n.e.c.	0.00	0.00	0.44	11.00	0.00	0.12
49 Water transport	0.00	0.00	0.02	1.28	0.00	0.00
50 Air Transport	0.00	0.00	0.07	2.12	0.00	0.02
51 Communication	0.00	0.00	0.03	0.18	0.00	0.20
52 Financial services n.e.c.	0.00	0.00	0.01	0.16	0.00	0.19
53 Insurance	0.00	0.00	0.01	0.07	0.00	0.06
54 Business services n.e.c.	0.00	0.00	1.02	1.21	0.00	1.43
55 Recreational and other services	0.00	0.00	0.69	1.01	0.00	0.57
56 Public Admin., Defense, Education, Health	0.00	0.00	0.25	0.59	0.00	0.37
57 Dwellings	0.00	0.00	0.00	0.00	0.00	0.00
58 Households	0.02	0.00	1.99	13.78	0.00	5.67
Sub-total	20.52	0.20	15.11	45.94	0.00	18.23
Total				100.00		

Table 7a. CO₂ emissions and fossil fuel consumption of the United States, 1997

No.	Emitters/users	Energy commodities											
		Coal		Crude oil		Natural gas		Petroleum products		Electricity		Gas	
		CO ₂	Usage	CO ₂	Usage	CO ₂	Usage	CO ₂	Usage	CO ₂	Usage	CO ₂	Usage
1	Paddy rice	0.13	33.68	0.00	0.00	0.00	0.00	763.21	248671.77	0.00	49337.46	1825.23	614811.56
2	Wheat	1613.80	415766.34	0.00	0.00	0.04	15.67	5799.36	1889557.00	0.00	375832.13	13869.04	4671653.00
3	Cereal grains n.e.c.	296.45	76375.77	0.00	0.00	0.11	48.35	14036.26	4573315.50	0.00	1252652.25	54803.98	18460190.00
4	Vegetables, fruit, nuts	63.81	16438.27	0.00	0.00	0.04	16.29	9592.32	3125385.50	0.00	842581.13	31379.23	10569788.00
5	Oil seeds	160.17	41264.95	0.00	0.00	0.02	8.05	2992.22	974931.25	0.00	806503.25	29396.03	9901766.00
6	Sugar cane, sugar beet	21.67	5582.73	0.00	0.00	0.00	1.03	366.47	119405.02	0.00	81144.42	3189.05	1074200.88
7	Plant-based fibers	60.73	15645.58	0.00	0.00	0.01	2.48	978.33	318759.78	0.00	427310.38	16023.10	5397226.50
8	Crops n.e.c.	34.48	8881.94	0.00	0.00	0.01	6.04	3874.91	1262527.38	0.00	1436778.25	4344.61	1463439.63
9	Bovine cattle, sheep and goats, horses	25.82	6652.03	0.00	0.00	0.09	36.66	3293.54	1073106.88	0.00	3243190.00	2.49	839.70
10	Animal products n.e.c.	25.76	6635.97	0.00	0.00	0.07	29.08	4094.84	1334186.88	0.00	2830506.00	1.20	404.72
11	Raw milk	25.18	6487.18	0.00	0.00	0.06	25.91	1754.40	571620.13	0.00	2977056.75	0.85	287.08
12	Wool, silk-worm cocoons	1.05	271.19	0.00	0.00	0.00	0.69	58.95	19208.18	0.00	40742.55	0.01	1.96
13	Forestry	25.41	6546.79	0.00	0.00	0.03	13.12	1109.66	361550.06	0.00	345922.84	1954.70	658420.50
14	Fishing	0.19	47.88	0.00	0.00	0.00	0.08	1211.78	394824.41	0.00	7.07	0.04	14.11
15	Coal	296.24	76321.21	0.00	0.02	0.00	0.10	14.96	4873.50	0.00	1141.76	1.42	478.34
16	Oil	0.00	0.15	7.92	2604.98	0.00	2.09	8.66	2822.72	0.00	1834.48	12.13	4087.10
17	Gas	0.00	0.04	0.00	0.12	2647.04	1132640.88	0.58	189.08	0.00	195.67	10.97	3693.61
18	Minerals n.e.c.	7.36	1896.33	1.07	353.36	2.29	977.73	16.83	5482.40	0.00	3282786.25	13.46	4534.77
19	Bovine meat prods	458.89	118226.15	0.00	0.25	1.00	425.91	471.43	153600.92	0.00	404710.00	2739.97	922931.50
20	Meat products n.e.c.	395.91	102000.32	0.00	0.16	0.64	275.89	375.26	122266.82	0.00	669697.56	2534.67	853780.00
21	Vegetable oils and fats	324.75	83665.02	0.00	0.63	2.45	1046.20	232.25	75672.80	0.00	177566.59	1911.00	643700.19
22	Dairy products	507.29	130694.59	0.00	0.06	0.27	114.29	950.77	309779.91	0.00	664820.94	3148.47	1060532.50
23	Processed rice	24.76	6377.70	0.00	0.00	0.00	0.03	40.58	13222.00	0.00	33311.66	99.56	33534.93
24	Sugar	442.94	114116.41	0.00	0.01	0.01	5.30	330.61	107719.18	0.00	57899.25	2832.94	954247.06
25	Food products n.e.c.	3005.33	774270.69	0.03	11.22	43.63	18667.99	4079.76	1329274.25	0.00	3159711.75	19730.56	6646049.00
26	Beverages and tobacco products	1281.78	330228.13	0.05	17.52	67.94	29069.27	1577.51	513987.75	0.00	795266.00	4152.75	1398812.25
27	Textiles	4.99	1284.87	0.06	18.42	48.33	20681.22	3354.40	1092934.38	0.00	2486233.00	5837.11	1966175.13
28	Wearing apparel	1.97	508.60	0.00	0.01	0.01	4.18	1662.47	541667.69	0.00	1008133.56	3284.89	1106484.25
29	Leather products	0.19	49.18	0.00	0.78	2.04	872.01	523.85	170683.17	0.00	101188.40	417.27	140554.81

....continued

Table 7a (continued)

No.	Emitters/users	Energy commodities											
		Coal		Crude oil		Natural gas		Petroleum products		Electricity		Gas	
		CO ₂	Usage	CO ₂	Usage	CO ₂	Usage	CO ₂	Usage	CO ₂	Usage	CO ₂	Usage
30	Wood products	1.64	422.97	0.04	12.83	34.00	14546.83	8842.74	2881154.75	0.00	2670951.25	4324.81	1456769.88
31	Paper products, publishing	9043.08	2329790.25	0.34	110.67	625.84	267788.81	13330.51	4343365.50	0.00	11808761.00	41259.29	13897791.00
32	Petroleum, coal products	0.00	371.23	0.00	859760832.00	734.40	314243.81	160041.41	52144936.00	0.00	2816.11	21.85	7358.96
33	Chemical, rubber, plastic products	22224.04	5725634.50	110.33	36296.38	93687.74	40088016.00	17441.29	120643208.00	0.00	21361350.00	53393.79	17985180.00
34	Mineral products n.e.c.	27913.51	7191425.00	0.84	275.65	1070.40	458012.00	10069.81	3280962.25	0.00	3315523.25	26087.38	8787281.00
35	Ferrous metals	26839.73	6914785.50	0.04	13.83	65.04	27831.27	8149.51	2655285.00	0.00	6183955.50	32026.47	10787807.00
36	Metals n.e.c.	3.12	804.23	0.21	70.55	446.26	190948.56	973.87	317309.19	0.00	6714790.50	17711.88	5966075.00
37	Metal products	471.66	121515.45	0.08	27.78	70.94	30352.97	2571.32	837792.25	0.00	2732557.00	10257.75	3455223.75
38	Motor vehicles and parts	5.30	1366.71	0.01	1.74	5.16	2206.75	2916.67	950314.56	0.00	2367512.50	6825.11	2298970.75
39	Transport equipment n.e.c.	1.99	512.16	0.01	2.18	6.40	2738.09	1774.50	578169.94	0.00	1192063.25	2791.67	940347.63
40	Electronic equipment	38.71	9973.47	0.02	5.57	14.17	6063.37	1095.92	357072.78	0.00	2243089.75	3397.12	1144286.25
41	Machinery and equipment n.e.c.	733.12	188875.84	0.41	136.41	345.87	147993.38	5984.54	1949892.13	0.00	5543933.50	14324.08	4824928.50
42	Manufactures n.e.c.	0.28	70.88	0.10	33.29	65.07	27842.66	40989.54	13355272.00	0.00	12860283.00	1012.28	340978.06
43	Electricity	1897338.25	488815872.00	10.46	3439.70	38363.25	16415239.00	58517.01	19066100.00	0.00	46720916.00	396213.84	133460784.00
44	Gas manufacture, distribution	0.11	28.77	584.05	192147.50	0.00	16463774.00	5.87	1912.55	0.00	843.93	18837.48	6345223.50
45	Water	392.16	101033.75	4.29	1412.95	6810.83	2914282.75	6258.57	2039177.25	0.00	840120.44	18789.04	6328907.50
46	Construction	0.00	0.92	0.00	0.03	0.00	0.38	3250.85	1059195.88	0.00	2468.24	5.37	1808.54
47	Trade	2.73	703.17	0.16	52.46	59.13	25303.17	347473.16	113214232.00	0.00	414875.28	24076.83	8110047.50
48	Transport n.e.c.	0.02	5.74	58.66	19299.95	21722.82	9294973.00	388842.25	126693168.00	0.00	29319.99	2303.63	775954.19
49	Water transport	0.87	225.01	0.04	12.34	13.88	5937.70	21990.39	7164943.00	0.00	1936.54	73.54	24771.93
50	Air Transport	0.00	0.37	0.57	188.02	211.45	90478.65	317640.81	103494208.00	0.00	5331.84	139.87	47114.33
51	Communication	0.01	3.51	0.00	0.00	0.04	18.86	1074.09	349960.94	0.00	2586613.25	2078.25	700037.94
52	Financial services n.e.c.	24.91	6417.82	0.00	0.00	0.02	8.75	2716.37	885051.63	0.00	7375631.00	16888.30	5688658.50
53	Insurance	0.02	4.98	0.00	0.00	0.01	4.06	530.11	172721.16	0.00	917128.38	1072.37	361217.22
54	Business services n.e.c.	877.85	226161.59	0.01	3.01	12.13	5190.55	12530.12	4082582.00	0.00	27675318.00	51022.71	17186502.00
55	Recreational and other services	61.63	15877.68	0.00	0.44	2.40	1027.46	5236.58	1706191.50	0.00	21894786.00	39712.12	13376643.00
56	Public Admin., Defense, Education, Health	74.97	19315.89	0.00	0.07	1.73	738.13	23480.48	7650444.00	0.00	24977712.00	82741.70	27870742.00
57	Dwellings	0.00	0.07	0.00	0.01	0.00	0.01	0.00	1.32	0.00	2.14	0.01	2.49
58	Households	2944.24	758532.69	0.00	0.44	1.36	582.18	811556.88	264422688.00	0.00	78971456.00	179979.94	60624496.00
	Total	1998101.00	514776001.84	779.80	860017383.34	167186.47	88001129.69	2338851.34	877008537.89	0.00	318966106.95	1250885.21	421348547.50

Table 7b. Significance of CO₂ emissions from emitters (%): United States, 1997

No. Emitters/users	Energy commodities						
	Coal	Crude oil	Natural gas	Petroleum products	Electricity	Gas	
1	Paddy rice	0.00	0.00	0.00	0.01	0.00	0.03
2	Wheat	0.03	0.00	0.00	0.10	0.00	0.24
3	Cereal grains n.e.c.	0.01	0.00	0.00	0.24	0.00	0.95
4	Vegetables, fruit, nuts	0.00	0.00	0.00	0.17	0.00	0.55
5	Oil seeds	0.00	0.00	0.00	0.05	0.00	0.51
6	Sugar cane, sugar beet	0.00	0.00	0.00	0.01	0.00	0.06
7	Plant-based fibers	0.00	0.00	0.00	0.02	0.00	0.28
8	Crops n.e.c.	0.00	0.00	0.00	0.07	0.00	0.08
9	Bovine cattle, sheep and goats, horses	0.00	0.00	0.00	0.06	0.00	0.00
10	Animal products n.e.c.	0.00	0.00	0.00	0.07	0.00	0.00
11	Raw milk	0.00	0.00	0.00	0.03	0.00	0.00
12	Wool, silk-worm cocoons	0.00	0.00	0.00	0.00	0.00	0.00
13	Forestry	0.00	0.00	0.00	0.02	0.00	0.03
14	Fishing	0.00	0.00	0.00	0.02	0.00	0.00
15	Coal	0.01	0.00	0.00	0.00	0.00	0.00
16	Oil	0.00	0.00	0.00	0.00	0.00	0.00
17	Gas	0.00	0.00	0.05	0.00	0.00	0.00
18	Minerals n.e.c.	0.00	0.00	0.00	0.00	0.00	0.00
19	Bovine meat prods	0.01	0.00	0.00	0.01	0.00	0.05
20	Meat products n.e.c.	0.01	0.00	0.00	0.01	0.00	0.04
21	Vegetable oils and fats	0.01	0.00	0.00	0.00	0.00	0.03
22	Dairy products	0.01	0.00	0.00	0.02	0.00	0.05
23	Processed rice	0.00	0.00	0.00	0.00	0.00	0.00
24	Sugar	0.01	0.00	0.00	0.01	0.00	0.05
25	Food products n.e.c.	0.05	0.00	0.00	0.07	0.00	0.34
26	Beverages and tobacco products	0.02	0.00	0.00	0.03	0.00	0.07
27	Textiles	0.00	0.00	0.00	0.06	0.00	0.10
28	Wearing apparel	0.00	0.00	0.00	0.03	0.00	0.06
29	Leather products	0.00	0.00	0.00	0.01	0.00	0.01
30	Wood products	0.00	0.00	0.00	0.15	0.00	0.08
31	Paper products, publishing	0.16	0.00	0.01	0.23	0.00	0.72
32	Petroleum, coal products	0.00	0.00	0.01	2.78	0.00	0.00
33	Chemical, rubber, plastic products	0.39	0.00	1.63	0.30	0.00	0.93
34	Mineral products n.e.c.	0.48	0.00	0.02	0.17	0.00	0.45
35	Ferrous metals	0.47	0.00	0.00	0.14	0.00	0.56
36	Metals n.e.c.	0.00	0.00	0.01	0.02	0.00	0.31
37	Metal products	0.01	0.00	0.00	0.04	0.00	0.18
38	Motor vehicles and parts	0.00	0.00	0.00	0.05	0.00	0.12
39	Transport equipment n.e.c.	0.00	0.00	0.00	0.03	0.00	0.05
40	Electronic equipment	0.00	0.00	0.00	0.02	0.00	0.06
41	Machinery and equipment n.e.c.	0.01	0.00	0.01	0.10	0.00	0.25
42	Manufactures n.e.c.	0.00	0.00	0.00	0.71	0.00	0.02
43	Electricity	32.96	0.00	0.67	1.02	0.00	6.88
44	Gas manufacture, distribution	0.00	0.01	0.00	0.00	0.00	0.33
45	Water	0.01	0.00	0.12	0.11	0.00	0.33

...continued

Table 7b (continued)

No. Emitters/users	Energy commodities					
	Coal	Crude oil	Natural gas	Petroleum products	Electricity	Gas
46 Construction	0.00	0.00	0.00	0.06	0.00	0.00
47 Trade	0.00	0.00	0.00	6.04	0.00	0.42
48 Transport n.e.c.	0.00	0.00	0.38	6.76	0.00	0.04
49 Water transport	0.00	0.00	0.00	0.38	0.00	0.00
50 Air Transport	0.00	0.00	0.00	5.52	0.00	0.00
51 Communication	0.00	0.00	0.00	0.02	0.00	0.04
52 Financial services n.e.c.	0.00	0.00	0.00	0.05	0.00	0.29
53 Insurance	0.00	0.00	0.00	0.01	0.00	0.02
54 Business services n.e.c.	0.02	0.00	0.00	0.22	0.00	0.89
55 Recreational and other services	0.00	0.00	0.00	0.09	0.00	0.69
56 Public Admin., Defense, Education, Health	0.00	0.00	0.00	0.41	0.00	1.44
57 Dwellings	0.00	0.00	0.00	0.00	0.00	0.00
58 Households	0.05	0.00	0.00	14.10	0.00	3.13
Sub-total	34.71	0.01	2.90	40.63	0.00	21.73
Total				100.00		

Table 8a. CO₂ emissions and fossil fuel consumption of France, 1997

No.	Emitters/users	Energy commodities											
		Coal		Crude oil		Natural gas		Petroleum products		Electricity		Gas	
		CO ₂	Usage	CO ₂	Usage	CO ₂	Usage	CO ₂	Usage	CO ₂	Usage	CO ₂	Usage
1	Paddy rice	0.00	0.01	0.00	0.00	0.03	11.62	0.60	196.44	0.00	32.79	0.00	0.16
2	Wheat	42.79	11023.88	0.00	0.06	30.04	12855.81	445.23	145064.81	0.00	14160.47	0.08	26.42
3	Cereal grains n.e.c.	35.35	9108.31	0.00	0.12	22.79	9752.54	337.56	109984.09	0.00	10642.70	0.06	18.82
4	Vegetables, fruit, nuts	81.80	21075.20	0.00	0.27	59.17	25320.28	863.34	281295.13	0.00	27011.87	0.92	309.36
5	Oil seeds	6.26	1613.54	0.00	0.00	8.23	3522.31	120.64	39306.05	0.00	3747.07	0.01	4.98
6	Sugar cane, sugar beet	13.30	3427.32	0.00	0.10	6.71	2871.40	100.65	32794.57	0.00	3235.21	0.03	10.43
7	Plant-based fibers	0.12	31.47	0.00	0.00	0.20	85.26	2.86	931.04	0.00	86.69	0.00	0.21
8	Crops n.e.c.	75.80	19527.76	0.00	0.14	55.17	23608.02	815.55	265722.31	0.00	25992.37	0.60	201.89
9	Bovine cattle, sheep and goats, horses	27.25	7021.13	0.00	0.92	75.94	32493.71	1103.29	359475.13	0.00	33746.91	0.35	116.46
10	Animal products n.e.c.	57.58	14835.36	0.00	0.26	117.12	50114.91	1699.74	553812.19	0.00	52191.65	0.90	303.38
11	Raw milk	35.90	9247.84	0.00	1.13	110.86	47434.21	1599.67	521205.69	0.00	48276.70	0.54	180.61
12	Wool, silk-worm cocoons	0.00	0.99	0.00	0.00	0.11	49.20	1.66	541.39	0.00	51.98	0.00	0.10
13	Forestry	39.77	10245.59	0.00	0.02	0.02	9.69	149.57	48732.09	0.00	3256.82	0.07	25.23
14	Fishing	16.03	4129.91	0.00	0.45	0.66	283.39	1448.90	472084.06	0.00	12291.30	0.07	22.45
15	Coal	3.98	1024.25	0.00	1.24	0.05	20.37	0.11	35.28	0.00	116.54	0.00	1.08
16	Oil	0.01	1.79	0.02	6.93	0.01	2.53	0.10	32.66	0.00	0.21	0.01	3.56
17	Gas	28.23	7274.01	0.04	13.34	503.83	215585.77	64.30	20949.00	0.00	25.80	0.00	0.59
18	Minerals n.e.c.	41.42	10670.72	0.00	0.41	358.21	153276.41	164.75	53677.47	0.00	82810.80	0.84	281.70
19	Bovine meat prods	0.40	102.94	0.00	0.28	179.98	77012.56	136.30	44408.40	0.00	73216.99	0.83	278.63
20	Meat products n.e.c.	0.67	172.43	0.00	0.29	291.98	124937.32	220.35	71795.34	0.00	118048.67	1.25	419.55
21	Vegetable oils and fats	2.54	655.44	0.00	0.00	90.02	38519.69	32.93	10728.99	0.00	35227.57	0.44	149.67
22	Dairy products	2.73	704.02	0.00	0.50	1326.14	567441.19	677.77	220830.42	0.00	287971.34	2.55	859.05
23	Processed rice	0.36	92.11	0.00	0.00	14.39	6155.28	8.43	2745.22	0.00	5012.04	0.02	6.34
24	Sugar	83.96	21629.90	0.00	0.59	536.32	229484.39	231.04	75277.70	0.00	40521.55	1.00	338.42
25	Food products n.e.c.	50.49	13006.97	0.01	3.82	1919.11	821165.25	1134.54	369658.94	0.00	676999.75	6.77	2280.05
26	Beverages and tobacco products	8.44	2174.13	0.00	1.02	447.07	191296.13	412.52	134406.94	0.00	206474.28	1.51	509.35
27	Textiles	6.62	1705.26	0.00	1.02	649.96	278111.44	345.42	112545.04	0.00	259485.22	3.15	1061.58
28	Wearing apparel	0.74	191.29	0.00	0.17	229.58	98233.44	140.34	45725.98	0.00	39375.53	0.45	150.93
29	Leather products	0.91	235.46	0.00	0.01	66.39	28407.68	59.91	19519.21	0.00	33784.06	0.11	35.93

....continued

Table 8a (continued)

No.	Emitters/users	Energy commodities											
		Coal		Crude oil		Natural gas		Petroleum products		Electricity		Gas	
		CO ₂	Usage	CO ₂	Usage	CO ₂	Usage	CO ₂	Usage	CO ₂	Usage	CO ₂	Usage
30	Wood products	86.68	22331.69	0.00	0.22	280.17	119883.91	2153.10	701524.69	0.00	454023.25	0.97	325.86
31	Paper products, publishing	782.19	201517.64	0.00	1.09	2946.43	1260745.63	975.52	317845.94	0.00	1003058.69	10.08	3395.00
32	Petroleum, coal products	0.00	2249.79	0.00	88574496.00	4.87	2082.71	17153.89	5589107.00	0.00	322.94	0.37	123.72
33	Chemical, rubber, plastic products	1637.81	421954.13	0.04	13.11	4003.73	3964726.00	6603.81	15021038.00	0.00	2156035.25	86.01	28972.27
34	Mineral products n.e.c.	904.49	233027.19	0.01	4.90	3745.06	1602472.13	3160.46	1029745.88	0.00	753157.06	9.03	3042.08
35	Ferrous metals	11376.97	2931077.75	0.02	5.90	1493.27	638955.13	490.13	159696.34	0.00	1305608.00	492.20	165792.23
36	Metals n.e.c.	272.82	70286.03	0.00	0.35	807.53	345535.00	855.22	278648.22	0.00	730975.75	3.34	1125.77
37	Metal products	402.16	103609.73	0.00	0.88	1178.59	504307.13	158.23	51553.16	0.00	442914.84	4.86	1636.37
38	Motor vehicles and parts	32.58	8393.45	0.00	0.54	1468.86	628511.19	272.69	88848.70	0.00	538353.88	4.60	1548.91
39	Transport equipment n.e.c.	102.17	26322.97	0.13	43.30	486.48	208159.41	98.70	32157.15	0.00	139656.14	6.95	2340.11
40	Electronic equipment	68.68	17693.61	0.00	0.79	1055.34	451569.88	117.75	38365.59	0.00	417448.44	2.84	957.90
41	Machinery and equipment n.e.c.	119.30	30735.19	0.00	1.04	1174.31	502474.47	186.44	60745.70	0.00	484646.25	3.77	1270.25
42	Manufactures n.e.c.	133.03	34273.82	0.00	0.25	483.13	206727.42	1726.17	562424.13	0.00	415076.03	0.61	205.89
43	Electricity	36281.90	9347395.00	0.05	15.35	874.11	374024.81	3572.87	1164117.38	0.00	6727840.50	1518.91	511630.22
44	Gas manufacture, distribution	283.64	73074.05	0.09	31.08	0.00	1232.05	7.61	2478.69	0.00	0.58	0.06	20.50
45	Water	2415.45	622299.50	0.00	0.21	1378.76	589957.88	347.33	113166.58	0.00	535389.38	0.58	195.46
46	Construction	40.73	10492.56	0.01	2.83	99.25	42469.96	2133.72	695213.13	0.00	136161.66	1.46	492.31
47	Trade	0.62	158.68	0.02	7.12	5.88	2516.04	21176.44	6899739.00	0.00	622316.63	0.07	22.04
48	Transport n.e.c.	0.18	46.39	0.02	6.13	0.82	348.84	45119.39	14700870.00	0.00	330610.78	0.02	6.90
49	Water transport	0.02	3.91	0.00	1.18	0.01	2.70	5205.70	1696127.50	0.00	2479.72	0.00	0.46
50	Air Transport	0.02	6.06	0.01	3.39	0.03	11.10	19649.78	6402319.50	0.00	8393.01	0.00	1.65
51	Communication	11.66	3003.64	0.00	0.44	337.15	144262.64	327.58	106733.93	0.00	301220.22	1.99	669.84
52	Financial services n.e.c.	32.62	8404.83	0.00	0.68	334.21	143005.98	562.87	183394.95	0.00	206129.25	2.71	911.52
53	Insurance	13.16	3389.82	0.00	0.56	72.26	30917.76	330.77	107771.66	0.00	141914.75	0.91	305.73
54	Business services n.e.c.	38.41	9896.63	0.01	1.92	1847.03	790323.50	2697.08	878768.00	0.00	965846.31	7.47	2517.36
55	Recreational and other services	157.57	40594.02	0.01	4.25	4802.24	2054830.63	3823.45	1245763.25	0.00	823457.63	10.62	3576.58
56	Public Admin., Defense, Education, Health	725.85	187002.92	0.01	4.08	9663.74	4135013.50	7547.15	2459024.25	0.00	5059516.50	33.67	11342.52
57	Dwellings	0.00	0.02	0.00	0.51	0.00	0.00	0.24	79.17	0.00	6.17	0.02	7.47
58	Households	33.34	8589.21	0.12	40.10	20986.55	8979929.00	91895.34	29941476.00	0.00	10473706.00	75.64	25478.04
	Total	56617.50	14588759.26	0.62	88574721.29	66629.90	30763058.20	250667.50	94542225.07	0.00	37270060.49	2302.32	775511.89

Table 8b. Significance of CO₂ emissions from emitters (%): France, 1997

No. Emitters/users	Energy commodities					
	Coal	Crude oil	Natural gas	Petroleum products	Electricity	Gas
1 Paddy rice	0.00	0.00	0.00	0.00	0.00	0.00
2 Wheat	0.01	0.00	0.01	0.12	0.00	0.00
3 Cereal grains n.e.c.	0.01	0.00	0.01	0.09	0.00	0.00
4 Vegetables, fruit, nuts	0.02	0.00	0.02	0.23	0.00	0.00
5 Oil seeds	0.00	0.00	0.00	0.03	0.00	0.00
6 Sugar cane, sugar beet	0.00	0.00	0.00	0.03	0.00	0.00
7 Plant-based fibers	0.00	0.00	0.00	0.00	0.00	0.00
8 Crops n.e.c.	0.02	0.00	0.01	0.22	0.00	0.00
9 Bovine cattle, sheep and goats, horses	0.01	0.00	0.02	0.29	0.00	0.00
10 Animal products n.e.c.	0.02	0.00	0.03	0.45	0.00	0.00
11 Raw milk	0.01	0.00	0.03	0.43	0.00	0.00
12 Wool, silk-worm cocoons	0.00	0.00	0.00	0.00	0.00	0.00
13 Forestry	0.01	0.00	0.00	0.04	0.00	0.00
14 Fishing	0.00	0.00	0.00	0.39	0.00	0.00
15 Coal	0.00	0.00	0.00	0.00	0.00	0.00
16 Oil	0.00	0.00	0.00	0.00	0.00	0.00
17 Gas	0.01	0.00	0.13	0.02	0.00	0.00
18 Minerals n.e.c.	0.01	0.00	0.10	0.04	0.00	0.00
19 Bovine meat prods	0.00	0.00	0.05	0.04	0.00	0.00
20 Meat products n.e.c.	0.00	0.00	0.08	0.06	0.00	0.00
21 Vegetable oils and fats	0.00	0.00	0.02	0.01	0.00	0.00
22 Dairy products	0.00	0.00	0.35	0.18	0.00	0.00
23 Processed rice	0.00	0.00	0.00	0.00	0.00	0.00
24 Sugar	0.02	0.00	0.14	0.06	0.00	0.00
25 Food products n.e.c.	0.01	0.00	0.51	0.30	0.00	0.00
26 Beverages and tobacco products	0.00	0.00	0.12	0.11	0.00	0.00
27 Textiles	0.00	0.00	0.17	0.09	0.00	0.00
28 Wearing apparel	0.00	0.00	0.06	0.04	0.00	0.00
29 Leather products	0.00	0.00	0.02	0.02	0.00	0.00
30 Wood products	0.02	0.00	0.07	0.57	0.00	0.00
31 Paper products, publishing	0.21	0.00	0.78	0.26	0.00	0.00
32 Petroleum, coal products	0.00	0.00	0.00	4.56	0.00	0.00
33 Chemical, rubber, plastic products	0.44	0.00	1.06	1.76	0.00	0.02
34 Mineral products n.e.c.	0.24	0.00	1.00	0.84	0.00	0.00
35 Ferrous metals	3.02	0.00	0.40	0.13	0.00	0.13
36 Metals n.e.c.	0.07	0.00	0.21	0.23	0.00	0.00
37 Metal products	0.11	0.00	0.31	0.04	0.00	0.00
38 Motor vehicles and parts	0.01	0.00	0.39	0.07	0.00	0.00
39 Transport equipment n.e.c.	0.03	0.00	0.13	0.03	0.00	0.00
40 Electronic equipment	0.02	0.00	0.28	0.03	0.00	0.00
41 Machinery and equipment n.e.c.	0.03	0.00	0.31	0.05	0.00	0.00
42 Manufactures n.e.c.	0.04	0.00	0.13	0.46	0.00	0.00
43 Electricity	9.64	0.00	0.23	0.95	0.00	0.40
44 Gas manufacture, distribution	0.08	0.00	0.00	0.00	0.00	0.00
45 Water	0.64	0.00	0.37	0.09	0.00	0.00

....continued

Table 8b (continued)

No. Emitters/users	Energy commodities					
	Coal	Crude oil	Natural gas	Petroleum products	Electricity	Gas
46 Construction	0.01	0.00	0.03	0.57	0.00	0.00
47 Trade	0.00	0.00	0.00	5.63	0.00	0.00
48 Transport n.e.c.	0.00	0.00	0.00	11.99	0.00	0.00
49 Water transport	0.00	0.00	0.00	1.38	0.00	0.00
50 Air Transport	0.00	0.00	0.00	5.22	0.00	0.00
51 Communication	0.00	0.00	0.09	0.09	0.00	0.00
52 Financial services n.e.c.	0.01	0.00	0.09	0.15	0.00	0.00
53 Insurance	0.00	0.00	0.02	0.09	0.00	0.00
54 Business services n.e.c.	0.01	0.00	0.49	0.72	0.00	0.00
55 Recreational and other services	0.04	0.00	1.28	1.02	0.00	0.00
56 Public Admin., Defense, Education, Health	0.19	0.00	2.57	2.01	0.00	0.01
57 Dwellings	0.00	0.00	0.00	0.00	0.00	0.00
58 Households	0.01	0.00	5.58	24.43	0.00	0.02
Sub-total	15.05	0.00	17.71	66.63	0.00	0.61
Total				100.00		

Table 9a. CO₂ emissions and fossil fuel consumption of Germany, 1997

No.	Emitters/users	Energy commodities											
		Coal		Crude oil		Natural gas		Petroleum products		Electricity		Gas	
		CO ₂	Usage	CO ₂	Usage	CO ₂	Usage	CO ₂	Usage	CO ₂	Usage	CO ₂	Usage
1	Paddy rice	0.10	25.63	0.00	0.00	67.62	28931.89	0.24	76.82	0.00	59.20	0.04	13.69
2	Wheat	18.42	4745.77	0.00	0.03	13.39	5729.11	430.72	140337.42	0.00	48497.62	0.25	85.07
3	Cereal grains n.e.c.	16.17	4166.89	0.00	0.08	14.60	6246.52	378.42	123298.03	0.00	42532.95	0.31	106.02
4	Vegetables, fruit, nuts	58.15	14981.86	0.00	0.18	25.58	10945.58	1353.14	440882.59	0.00	152353.86	9.40	3165.58
5	Oil seeds	5.04	1298.08	0.00	0.00	3.50	1497.03	117.74	38362.38	0.00	13235.63	0.04	13.17
6	Sugar cane, sugar beet	10.22	2632.18	0.00	0.12	4.81	2056.26	238.62	77748.63	0.00	26849.45	0.30	101.24
7	Plant-based fibers	0.26	67.74	0.00	0.00	178.59	76415.17	0.61	198.73	0.00	153.78	0.12	40.45
8	Crops n.e.c.	34.71	8943.13	0.00	0.05	21.23	9085.39	810.79	264174.41	0.00	91318.99	4.39	1480.26
9	Bovine cattle, sheep and goats, horses	14.08	3628.41	0.00	0.48	20.07	8589.03	333.18	108556.69	0.00	37527.38	0.82	274.90
10	Animal products n.e.c.	34.09	8783.88	0.00	0.19	51.98	22242.35	804.24	262039.75	0.00	90686.93	3.13	1054.02
11	Raw milk	32.16	8284.38	0.00	1.28	56.21	24050.87	760.03	247635.53	0.00	85571.94	2.39	805.57
12	Wool, silk-worm cocoons	0.01	2.74	0.00	0.00	0.02	10.69	0.26	83.25	0.00	29.42	0.00	0.14
13	Forestry	9.18	2365.98	0.00	0.01	0.66	283.22	96.31	31378.47	0.00	14773.77	22.56	7600.01
14	Fishing	36.10	9301.72	0.01	1.77	52.72	22557.24	397.12	129390.98	0.00	58401.78	89.36	30099.98
15	Coal	105.31	27130.87	0.02	7.08	0.10	41.60	2.28	743.05	0.00	863.31	1.81	608.11
16	Oil	0.15	38.35	0.02	6.99	0.10	41.70	0.24	76.82	0.00	9.25	0.00	1.13
17	Gas	0.00	1.04	0.00	0.15	9.44	4041.08	1.18	383.78	0.00	27.28	0.00	0.00
18	Minerals n.e.c.	205.94	53057.30	0.00	0.45	211.28	90404.84	343.25	111836.95	0.00	171562.78	96.57	32530.08
19	Bovine meat prods	0.09	23.11	0.00	0.25	26.82	11474.51	82.12	26757.11	0.00	55405.85	18.67	6289.63
20	Meat products n.e.c.	0.16	40.83	0.00	0.21	36.50	15617.63	96.13	31321.37	0.00	68782.60	18.02	6070.31
21	Vegetable oils and fats	1.88	483.35	0.00	0.02	133.39	57077.87	447.34	145752.34	0.00	179944.36	152.38	51327.55
22	Dairy products	1.74	447.66	0.00	0.50	235.66	100835.07	45.24	14741.77	0.00	149896.47	85.61	28835.70
23	Processed rice	1.57	404.19	0.00	0.00	340.49	145693.91	2.09	680.37	0.00	373.46	0.21	71.35
24	Sugar	3.98	1025.45	0.00	0.58	118.52	50715.61	27.00	8798.10	0.00	16838.86	12.03	4053.38
25	Food products n.e.c.	906.24	233477.55	0.01	4.38	3032.02	1297372.00	1589.52	517900.94	0.00	491291.97	228.90	77103.38
26	Beverages and tobacco products	142.71	36767.78	0.01	2.12	169.99	72737.23	1089.34	354931.16	0.00	213312.23	164.75	55496.06
27	Textiles	152.58	39308.67	0.00	1.53	1086.14	464746.28	345.49	112569.63	0.00	292501.13	41.68	14039.13
28	Wearing apparel	33.96	8748.95	0.00	0.27	48.86	20904.93	195.04	63547.77	0.00	67879.55	5.85	1970.11
29	Leather products	0.03	8.91	0.00	0.01	3.25	1390.36	80.52	26234.59	0.00	22198.38	1.72	577.94

....continued

Table 9a (continued)

No.	Emitters/users	Energy commodities											
		Coal		Crude oil		Natural gas		Petroleum products		Electricity		Gas	
		CO ₂	Usage	CO ₂	Usage	CO ₂	Usage	CO ₂	Usage	CO ₂	Usage	CO ₂	Usage
30	Wood products	27.75	7150.23	0.00	0.76	139.80	59818.80	448.76	146216.25	0.00	296371.75	103.87	34987.20
31	Paper products, publishing	1677.42	432157.66	0.00	1.29	2470.76	1057213.13	1341.56	437108.84	0.00	1687653.13	2158.03	726910.75
32	Petroleum, coal products	0.00	287.01	0.00	101893776.00	316.59	135464.59	20947.00	6824983.00	0.00	493.09	0.01	4.86
33	Chemical, rubber, plastic products	6157.06	1586258.00	0.07	22.11	12163.49	7591974.50	1157.01	21878300.00	0.00	4566773.50	398.16	134116.41
34	Mineral products n.e.c.	8082.69	2082363.63	0.03	8.64	6510.24	2785663.75	3965.98	1292200.50	0.00	1280045.13	618.51	208337.59
35	Ferrous metals	19094.64	4919399.50	0.04	14.50	6886.01	2946453.00	399.70	130230.61	0.00	2051314.88	101.37	34144.46
36	Metals n.e.c.	490.53	126377.32	0.00	0.60	1968.64	842360.38	502.53	163733.94	0.00	1463483.13	11.66	3926.94
37	Metal products	327.63	84409.14	0.00	1.27	722.73	309250.28	574.26	187104.78	0.00	275164.41	36.61	12332.77
38	Motor vehicles and parts	95.95	24719.47	0.01	1.93	2739.16	1172056.75	908.55	296025.50	0.00	1321179.13	37.94	12779.75
39	Transport equipment n.e.c.	29.54	7610.43	0.00	0.11	0.00	1.05	46.09	15017.69	0.00	127132.79	4.45	1497.59
40	Electronic equipment	58.52	15076.53	0.00	1.22	649.37	277858.34	700.19	228137.78	0.00	164406.59	13.40	4512.02
41	Machinery and equipment n.e.c.	70.14	18071.34	0.01	2.37	1356.34	580362.19	1568.00	510888.72	0.00	328115.06	39.34	13250.09
42	Manufactures n.e.c.	12.46	3210.16	0.00	0.39	1230.52	526527.00	2970.85	967967.88	0.00	2227730.25	28.01	9435.28
43	Electricity	286156.25	73723136.00	0.11	37.06	29876.92	12784027.00	5903.80	1923586.50	0.00	7209405.50	7736.38	2605924.25
44	Gas manufacture, distribution	179.93	46356.01	0.77	253.72	0.00	937076.94	35.46	11552.28	0.00	62.64	0.17	56.99
45	Water	71.75	18483.90	0.00	0.24	683.84	292610.06	129.36	42148.91	0.00	848414.25	27.86	9383.36
46	Construction	64.14	16524.78	0.02	5.73	1034.44	442625.28	1922.31	626329.75	0.00	80957.50	365.43	123092.84
47	Trade	14.48	3731.11	0.04	12.72	10.97	4693.58	44927.45	14638330.00	0.00	1193391.75	3.08	1036.00
48	Transport n.e.c.	5.67	1461.76	0.02	6.65	0.67	284.76	51405.11	16748889.00	0.00	297952.44	0.43	144.36
49	Water transport	0.05	12.66	0.01	3.20	0.12	51.74	11861.32	3864674.25	0.00	4985.98	0.06	18.65
50	Air Transport	0.05	12.91	0.01	3.66	0.06	24.25	10501.39	3421578.50	0.00	16147.95	0.11	37.94
51	Communication	81.62	21027.36	0.00	0.85	219.89	94090.17	1030.06	335614.94	0.00	363257.56	96.86	32627.59
52	Financial services n.e.c.	0.96	247.89	0.00	0.56	123.44	52819.16	239.38	77995.23	0.00	120790.23	71.64	24131.38
53	Insurance	1.35	348.75	0.01	2.27	95.95	41057.64	493.46	160779.48	0.00	215333.55	102.65	34577.83
54	Business services n.e.c.	9.29	2392.28	0.01	3.52	1426.40	610342.56	537.26	175051.58	0.00	815947.44	162.95	54888.85
55	Recreational and other services	146.74	37806.17	0.04	13.08	5252.70	2247574.50	17561.91	5722047.00	0.00	1607516.75	1507.24	507697.75
56	Public Admin., Defense, Education, Health	2508.03	646149.31	0.02	8.13	9026.17	3862205.00	12164.52	3963463.50	0.00	4555742.50	4459.44	1502118.88
57	Dwellings	0.54	139.24	0.00	0.01	0.40	172.41	0.86	280.59	0.00	36.60	0.00	0.09
58	Households	6619.45	1705384.88	0.17	56.39	36519.97	15626521.00	168025.81	54746424.00	0.00	11404899.00	25616.34	8628616.00
	Total	333809.66	86000497.84	1.49	101894267.71	127389.13	57832914.78	372338.15	142817100.45	0.00	46917584.62	44663.31	15044402.41

Table 9b. Significance of CO₂ emissions from emitters (%): Germany, 1997

No. Emitters/users	Energy commodities						
	Coal	Crude oil	Natural gas	Petroleum products	Electricity	Gas	
1	Paddy rice	0.00	0.00	0.01	0.00	0.00	0.00
2	Wheat	0.00	0.00	0.00	0.05	0.00	0.00
3	Cereal grains n.e.c.	0.00	0.00	0.00	0.04	0.00	0.00
4	Vegetables, fruit, nuts	0.01	0.00	0.00	0.15	0.00	0.00
5	Oil seeds	0.00	0.00	0.00	0.01	0.00	0.00
6	Sugar cane, sugar beet	0.00	0.00	0.00	0.03	0.00	0.00
7	Plant-based fibers	0.00	0.00	0.02	0.00	0.00	0.00
8	Crops n.e.c.	0.00	0.00	0.00	0.09	0.00	0.00
9	Bovine cattle, sheep and goats, horses	0.00	0.00	0.00	0.04	0.00	0.00
10	Animal products n.e.c.	0.00	0.00	0.01	0.09	0.00	0.00
11	Raw milk	0.00	0.00	0.01	0.09	0.00	0.00
12	Wool, silk-worm cocoons	0.00	0.00	0.00	0.00	0.00	0.00
13	Forestry	0.00	0.00	0.00	0.01	0.00	0.00
14	Fishing	0.00	0.00	0.01	0.05	0.00	0.01
15	Coal	0.01	0.00	0.00	0.00	0.00	0.00
16	Oil	0.00	0.00	0.00	0.00	0.00	0.00
17	Gas	0.00	0.00	0.00	0.00	0.00	0.00
18	Minerals n.e.c.	0.02	0.00	0.02	0.04	0.00	0.01
19	Bovine meat prods	0.00	0.00	0.00	0.01	0.00	0.00
20	Meat products n.e.c.	0.00	0.00	0.00	0.01	0.00	0.00
21	Vegetable oils and fats	0.00	0.00	0.02	0.05	0.00	0.02
22	Dairy products	0.00	0.00	0.03	0.01	0.00	0.01
23	Processed rice	0.00	0.00	0.04	0.00	0.00	0.00
24	Sugar	0.00	0.00	0.01	0.00	0.00	0.00
25	Food products n.e.c.	0.10	0.00	0.35	0.18	0.00	0.03
26	Beverages and tobacco products	0.02	0.00	0.02	0.12	0.00	0.02
27	Textiles	0.02	0.00	0.12	0.04	0.00	0.00
28	Wearing apparel	0.00	0.00	0.01	0.02	0.00	0.00
29	Leather products	0.00	0.00	0.00	0.01	0.00	0.00
30	Wood products	0.00	0.00	0.02	0.05	0.00	0.01
31	Paper products, publishing	0.19	0.00	0.28	0.15	0.00	0.25
32	Petroleum, coal products	0.00	0.00	0.04	2.39	0.00	0.00
33	Chemical, rubber, plastic products	0.70	0.00	1.39	0.13	0.00	0.05
34	Mineral products n.e.c.	0.92	0.00	0.74	0.45	0.00	0.07
35	Ferrous metals	2.17	0.00	0.78	0.05	0.00	0.01
36	Metals n.e.c.	0.06	0.00	0.22	0.06	0.00	0.00
37	Metal products	0.04	0.00	0.08	0.07	0.00	0.00
38	Motor vehicles and parts	0.01	0.00	0.31	0.10	0.00	0.00
39	Transport equipment n.e.c.	0.00	0.00	0.00	0.01	0.00	0.00
40	Electronic equipment	0.01	0.00	0.07	0.08	0.00	0.00
41	Machinery and equipment n.e.c.	0.01	0.00	0.15	0.18	0.00	0.00
42	Manufactures n.e.c.	0.00	0.00	0.14	0.34	0.00	0.00
43	Electricity	32.58	0.00	3.40	0.67	0.00	0.88
44	Gas manufacture, distribution	0.02	0.00	0.00	0.00	0.00	0.00
45	Water	0.01	0.00	0.08	0.01	0.00	0.00

....continued

Table 9b (continued)

No. Emitters/users	Energy commodities					
	Coal	Crude oil	Natural gas	Petroleum products	Electricity	Gas
46 Construction	0.01	0.00	0.12	0.22	0.00	0.04
47 Trade	0.00	0.00	0.00	5.12	0.00	0.00
48 Transport n.e.c.	0.00	0.00	0.00	5.85	0.00	0.00
49 Water transport	0.00	0.00	0.00	1.35	0.00	0.00
50 Air Transport	0.00	0.00	0.00	1.20	0.00	0.00
51 Communication	0.01	0.00	0.03	0.12	0.00	0.01
52 Financial services n.e.c.	0.00	0.00	0.01	0.03	0.00	0.01
53 Insurance	0.00	0.00	0.01	0.06	0.00	0.01
54 Business services n.e.c.	0.00	0.00	0.16	0.06	0.00	0.02
55 Recreational and other services	0.02	0.00	0.60	2.00	0.00	0.17
56 Public Admin., Defense, Education, Health	0.29	0.00	1.03	1.39	0.00	0.51
57 Dwellings	0.00	0.00	0.00	0.00	0.00	0.00
58 Households	0.75	0.00	4.16	19.13	0.00	2.92
Sub-total	38.01	0.00	14.51	42.40	0.00	5.09
Total				100.00		

Table 10a. CO₂ emissions and fossil fuel consumption of the Netherlands, 1997

No.	Emitters/users	Energy commodities											
		Coal		Crude oil		Natural gas		Petroleum products		Electricity		Gas	
		CO ₂	Usage	CO ₂	Usage	CO ₂	Usage	CO ₂	Usage	CO ₂	Usage	CO ₂	Usage
1	Paddy rice	3.87	996.09	0.00	0.04	4.77	2040.80	1.37	446.84	0.00	176.75	1.44	484.19
2	Wheat	0.04	11.00	0.00	0.00	0.04	16.51	3.56	1161.29	0.00	753.13	24.05	8102.50
3	Cereal grains n.e.c.	0.04	11.21	0.00	0.00	0.05	19.29	5.06	1649.33	0.00	1043.53	34.71	11691.11
4	Vegetables, fruit, nuts	1.34	346.21	0.00	0.80	1.00	429.83	514.44	167615.08	0.00	104445.99	3706.95	1248651.13
5	Oil seeds	0.07	18.94	0.00	0.00	0.13	56.92	3.36	1094.22	0.00	760.84	19.50	6567.75
6	Sugar cane, sugar beet	0.13	34.59	0.00	0.02	0.07	29.17	5.67	1846.76	0.00	1215.34	36.02	12133.58
7	Plant-based fibers	1.02	263.77	0.00	0.01	1.26	541.05	0.36	118.77	0.00	47.26	0.39	129.71
8	Crops n.e.c.	1.08	279.35	0.00	0.53	1.13	482.22	181.07	58996.28	0.00	37624.89	1270.97	428112.88
9	Bovine cattle, sheep and goats, horses	0.20	52.74	0.00	0.08	0.54	228.93	108.38	35312.80	0.00	22149.47	762.85	256957.67
10	Animal products n.e.c.	0.58	148.96	0.00	0.09	1.26	538.31	309.39	100807.28	0.00	63150.51	2201.26	741473.38
11	Raw milk	0.51	130.51	0.00	0.18	1.25	536.40	239.82	78137.45	0.00	48961.13	1696.01	571285.13
12	Wool, silk-worm cocoons	0.00	0.01	0.00	0.00	0.00	0.25	0.09	30.88	0.00	19.77	0.66	223.77
13	Forestry	0.18	47.18	0.00	0.01	0.01	2.72	12.66	4126.08	0.00	49.64	0.13	42.53
14	Fishing	0.35	90.20	0.00	0.09	0.49	210.53	73.86	24066.36	0.00	146.92	0.52	174.38
15	Coal	0.01	1.52	0.00	0.74	0.01	2.37	0.01	4.27	0.00	0.25	0.00	1.04
16	Oil	0.01	2.66	0.01	4.68	0.02	6.84	0.07	21.59	0.00	1.06	0.03	10.64
17	Gas	0.00	0.04	0.03	8.93	761.67	325910.56	0.12	38.25	0.00	24.93	0.07	24.64
18	Minerals n.e.c.	0.00	0.99	0.00	0.13	33.14	14181.99	98.46	32081.86	0.00	22603.05	3.77	1268.81
19	Bovine meat prods	0.02	5.03	0.00	0.17	9.54	4081.12	18.61	6064.40	0.00	25081.27	70.06	23597.75
20	Meat products n.e.c.	0.03	8.86	0.00	0.31	13.62	5829.29	13.23	4309.28	0.00	73168.19	152.99	51532.27
21	Vegetable oils and fats	29.63	7634.06	0.00	0.05	249.73	106857.66	10.61	3455.93	0.00	73493.09	492.48	165887.20
22	Dairy products	0.58	149.31	0.00	0.68	245.96	105243.02	13.60	4431.54	0.00	71109.89	342.59	115397.88
23	Processed rice	4.62	1190.99	0.00	0.29	15.05	6441.84	2.91	948.60	0.00	1277.46	4.51	1520.30
24	Sugar	1.30	333.93	0.00	1.03	368.17	157538.27	0.81	264.30	0.00	10170.54	56.49	19029.40
25	Food products n.e.c.	55.01	14171.38	0.00	1.01	56.08	23994.06	23.76	7743.08	0.00	220368.72	963.36	324498.44
26	Beverages and tobacco products	0.84	216.17	0.00	0.65	60.29	25796.72	5.54	1805.53	0.00	61632.66	225.48	75951.19
27	Textiles	0.01	1.31	0.00	0.11	64.45	27579.27	2.41	786.54	0.00	38909.52	283.15	95374.70
28	Wearing apparel	0.00	0.41	0.00	0.22	1.26	540.18	1.46	474.08	0.00	10525.07	53.60	18053.39
29	Leather products	0.00	0.03	0.00	0.01	0.10	43.20	0.53	171.73	0.00	5696.11	36.87	12418.71

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Table 10a (continued)

No.	Emitters/users	Energy commodities											
		Coal		Crude oil		Natural gas		Petroleum products		Electricity		Gas	
		CO ₂	Usage	CO ₂	Usage	CO ₂	Usage	CO ₂	Usage	CO ₂	Usage	CO ₂	Usage
30	Wood products	0.00	0.28	0.00	0.05	0.11	46.44	0.22	72.60	0.00	21428.44	47.59	16030.99
31	Paper products, publishing	0.04	11.11	0.00	0.34	690.45	295435.59	11.95	3894.21	0.00	302949.09	264.57	89118.17
32	Petroleum, coal products	0.00	792.00	0.00	63588684.00	12.76	5458.69	13513.13	4402868.00	0.00	66.07	0.24	79.96
33	Chemical, rubber, plastic products	520.20	134019.33	0.01	4.87	5475.51	5059485.50	3909.92	7593985.00	0.00	1038621.69	242.90	81817.09
34	Mineral products n.e.c.	190.07	48967.47	0.00	0.96	783.78	335372.78	173.11	56404.12	0.00	135586.98	844.58	284488.03
35	Ferrous metals	5158.59	1329019.38	0.01	1.74	528.57	226170.23	19.43	6332.19	0.00	207899.22	235.02	79162.60
36	Metals n.e.c.	0.30	76.86	0.29	93.82	184.73	79042.13	2.02	657.18	0.00	396272.34	57.52	19374.32
37	Metal products	0.02	4.64	0.00	0.29	2.81	1202.50	11.72	3820.00	0.00	75235.30	364.79	122877.62
38	Motor vehicles and parts	0.00	0.44	0.00	0.06	1.66	708.55	20.35	6628.97	0.00	29856.91	134.95	45454.99
39	Transport equipment n.e.c.	0.00	0.46	0.00	0.05	0.02	8.19	9.40	3062.38	0.00	21069.29	78.89	26574.89
40	Electronic equipment	0.01	2.33	0.00	0.33	10.50	4490.81	23.60	7689.60	0.00	117977.16	531.58	179055.91
41	Machinery and equipment n.e.c.	0.00	0.92	0.00	0.23	6.35	2717.35	18.15	5913.72	0.00	128536.91	441.14	148593.39
42	Manufactures n.e.c.	0.00	0.22	0.00	0.04	1.38	589.29	0.37	121.89	0.00	160682.84	284.95	95983.75
43	Electricity	31872.55	8211403.50	0.01	3.84	24531.36	10496715.00	2749.08	895710.69	0.00	840520.69	970.77	326994.88
44	Gas manufacture, distribution	0.06	14.92	0.24	80.51	0.00	408739.84	0.27	89.21	0.00	23.06	47.58	16026.74
45	Water	29.63	7633.82	0.00	0.04	3.05	1304.87	9.74	3174.76	0.00	177616.34	87.09	29335.13
46	Construction	0.02	4.46	0.00	0.94	25.99	11120.34	496.74	161849.67	0.00	46796.74	195.10	65717.17
47	Trade	0.03	8.04	0.01	4.19	0.13	55.56	35766.50	11653496.00	0.00	101652.63	8.35	2811.05
48	Transport n.e.c.	0.01	2.18	0.01	1.92	0.01	2.75	5376.41	1751750.13	0.00	42147.51	0.91	306.39
49	Water transport	0.00	0.40	0.00	1.30	0.00	1.08	15502.63	5051090.50	0.00	1278.61	0.10	33.81
50	Air Transport	0.00	0.53	0.00	0.75	0.00	0.32	14518.72	4730510.00	0.00	1346.06	0.11	36.28
51	Communication	1.07	276.77	0.00	0.05	1.26	538.39	46.24	15066.45	0.00	25186.95	232.74	78396.77
52	Financial services n.e.c.	0.41	105.71	0.00	0.04	1.15	493.53	37.56	12236.36	0.00	133664.66	407.08	137119.73
53	Insurance	0.42	107.01	0.00	0.07	0.81	346.88	56.94	18553.33	0.00	82170.38	210.72	70980.52
54	Business services n.e.c.	3.20	823.90	0.00	0.32	6.86	2936.43	331.61	108044.34	0.00	373087.84	1973.30	664686.94
55	Recreational and other services	2.82	726.15	0.00	0.49	4.03	1722.98	168.32	54842.95	0.00	277871.66	1036.62	349175.59
56	Public Admin., Defense, Education, Health	26.16	6738.95	0.00	1.11	39.32	16824.05	3004.64	978977.13	0.00	1116873.38	6625.19	2231630.75
57	Dwellings	0.00	0.01	0.00	0.17	0.00	0.00	0.71	232.71	0.00	53.25	0.40	134.59
58	Households	22.87	5891.51	0.03	9.12	129.71	55500.41	16905.32	5508116.00	0.00	1782693.50	24770.70	8343771.50
	Total	37929.95	9772780.75	0.65	63588912.50	34333.40	17816209.80	114336.02	43573200.49	0.00	8533772.48	52536.39	17696365.62

Table 10b. Significance of CO₂ emissions from emitters (%): Netherlands, 1997

No. Emitters/users	Energy commodities						
	Coal	Crude oil	Natural gas	Petroleum products	Electricity	Gas	
1	Paddy rice	0.00	0.00	0.00	0.00	0.00	0.00
2	Wheat	0.00	0.00	0.00	0.00	0.00	0.01
3	Cereal grains n.e.c.	0.00	0.00	0.00	0.00	0.00	0.01
4	Vegetables, fruit, nuts	0.00	0.00	0.00	0.22	0.00	1.55
5	Oil seeds	0.00	0.00	0.00	0.00	0.00	0.01
6	Sugar cane, sugar beet	0.00	0.00	0.00	0.00	0.00	0.02
7	Plant-based fibers	0.00	0.00	0.00	0.00	0.00	0.00
8	Crops n.e.c.	0.00	0.00	0.00	0.08	0.00	0.53
9	Bovine cattle, sheep and goats, horses	0.00	0.00	0.00	0.05	0.00	0.32
10	Animal products n.e.c.	0.00	0.00	0.00	0.13	0.00	0.92
11	Raw milk	0.00	0.00	0.00	0.10	0.00	0.71
12	Wool, silk-worm cocoons	0.00	0.00	0.00	0.00	0.00	0.00
13	Forestry	0.00	0.00	0.00	0.01	0.00	0.00
14	Fishing	0.00	0.00	0.00	0.03	0.00	0.00
15	Coal	0.00	0.00	0.00	0.00	0.00	0.00
16	Oil	0.00	0.00	0.00	0.00	0.00	0.00
17	Gas	0.00	0.00	0.32	0.00	0.00	0.00
18	Minerals n.e.c.	0.00	0.00	0.01	0.04	0.00	0.00
19	Bovine meat prods	0.00	0.00	0.00	0.01	0.00	0.03
20	Meat products n.e.c.	0.00	0.00	0.01	0.01	0.00	0.06
21	Vegetable oils and fats	0.01	0.00	0.10	0.00	0.00	0.21
22	Dairy products	0.00	0.00	0.10	0.01	0.00	0.14
23	Processed rice	0.00	0.00	0.01	0.00	0.00	0.00
24	Sugar	0.00	0.00	0.15	0.00	0.00	0.02
25	Food products n.e.c.	0.02	0.00	0.02	0.01	0.00	0.40
26	Beverages and tobacco products	0.00	0.00	0.03	0.00	0.00	0.09
27	Textiles	0.00	0.00	0.03	0.00	0.00	0.12
28	Wearing apparel	0.00	0.00	0.00	0.00	0.00	0.02
29	Leather products	0.00	0.00	0.00	0.00	0.00	0.02
30	Wood products	0.00	0.00	0.00	0.00	0.00	0.02
31	Paper products, publishing	0.00	0.00	0.29	0.00	0.00	0.11
32	Petroleum, coal products	0.00	0.00	0.01	5.65	0.00	0.00
33	Chemical, rubber, plastic products	0.22	0.00	2.29	1.64	0.00	0.10
34	Mineral products n.e.c.	0.08	0.00	0.33	0.07	0.00	0.35
35	Ferrous metals	2.16	0.00	0.22	0.01	0.00	0.10
36	Metals n.e.c.	0.00	0.00	0.08	0.00	0.00	0.02
37	Metal products	0.00	0.00	0.00	0.00	0.00	0.15
38	Motor vehicles and parts	0.00	0.00	0.00	0.01	0.00	0.06
39	Transport equipment n.e.c.	0.00	0.00	0.00	0.00	0.00	0.03
40	Electronic equipment	0.00	0.00	0.00	0.01	0.00	0.22
41	Machinery and equipment n.e.c.	0.00	0.00	0.00	0.01	0.00	0.18
42	Manufactures n.e.c.	0.00	0.00	0.00	0.00	0.00	0.12
43	Electricity	13.33	0.00	10.26	1.15	0.00	0.41
44	Gas manufacture, distribution	0.00	0.00	0.00	0.00	0.00	0.02
45	Water	0.01	0.00	0.00	0.00	0.00	0.04

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Table 10b (continued)

No. Emitters/users	Energy commodities					
	Coal	Crude oil	Natural gas	Petroleum products	Electricity	Gas
46 Construction	0.00	0.00	0.01	0.21	0.00	0.08
47 Trade	0.00	0.00	0.00	14.96	0.00	0.00
48 Transport n.e.c.	0.00	0.00	0.00	2.25	0.00	0.00
49 Water transport	0.00	0.00	0.00	6.48	0.00	0.00
50 Air Transport	0.00	0.00	0.00	6.07	0.00	0.00
51 Communication	0.00	0.00	0.00	0.02	0.00	0.10
52 Financial services n.e.c.	0.00	0.00	0.00	0.02	0.00	0.17
53 Insurance	0.00	0.00	0.00	0.02	0.00	0.09
54 Business services n.e.c.	0.00	0.00	0.00	0.14	0.00	0.83
55 Recreational and other services	0.00	0.00	0.00	0.07	0.00	0.43
56 Public Admin., Defense, Education, Health	0.01	0.00	0.02	1.26	0.00	2.77
57 Dwellings	0.00	0.00	0.00	0.00	0.00	0.00
58 Households	0.01	0.00	0.05	7.07	0.00	10.36
Sub-total	15.86	0.00	14.36	47.81	0.00	21.97
Total				100.00		

Appendix

Table A1. Values of coefficients in Equation 1

Energy commodities	Conversion Coefficient (CC) (TJ/1000toe)	Emission Factor (EF) (ton Carbon/TJ)	Fraction of Carbon Oxydized (FOC)
Coal	41.868	25.80	0.980
Crude oil	41.868	20.00	0.990
Natural gas	41.868	15.30	0.950
Petroleum products*	44.50	19.00	0.990
Gas**	47.31	17.20	0.995

* We use an approximate for all petroleum products.

** Mainly Liquefied Petroleum Gas (LPG).

Note: values of coefficients are obtained from the "Greenhouse Gas Inventory Reference Manual" of IEA (1997).

Table A2. Feedstock use ratios of fuels by the petrochemistry sector

No. Countries	Ratios of fuels used by the petrochemistry sector as feedstocks:	
	Natural gas	Petroleum products
1 Australia	0.261	0.872
2 New Zealand	1.000	0.000
3 China	0.556	0.749
4 Hong Kong	0.000	0.000
5 Japan	0.000	0.941
6 Korea	0.000	0.879
7 Taiwan	0.905	0.692
8 Indonesia	1.000	0.000
9 Malaysia	0.687	0.000
10 Philippines	0.000	0.000
11 Singapore	0.687	0.000
12 Thailand	1.000	0.127
13 Vietnam	1.000	0.127
14 Bangladesh	0.073	0.517
15 India	0.073	0.517
16 Sri Lanka	0.073	0.517
17 Rest of South Asia	0.658	0.000
18 Canada	0.442	0.989
19 United States	0.000	0.953
20 Mexico	0.202	0.744
21 Central America and the Caribbean	0.000	0.000
22 Colombia	0.000	0.000
23 Peru	0.000	0.000
24 Venezuela	0.000	0.000
25 Rest of Andean Pact	0.000	0.000
26 Argentina	1.000	1.000
27 Brazil	0.480	0.679
28 Chile	0.000	0.000
29 Uruguay	1.000	1.000
30 Rest of South America	0.480	0.679
31 Austria	0.630	0.000
32 Belgium	0.385	0.891
33 Denmark	0.000	0.000
34 Finland	0.500	0.764
35 France	0.568	0.857
36 Germany	0.315	0.983
37 United Kingdom	0.212	0.945
38 Greece	1.000	0.200
39 Ireland	0.797	0.000
40 Italy	0.256	0.725
41 Luxembourg	0.000	0.000
42 Netherlands	0.537	0.832
43 Portugal	0.000	0.871
44 Spain	0.312	0.762
45 Sweden	0.000	0.994

....continued

Table A2 (continued)

No. Countries	Ratios of fuels used by the petrochemistry sector as feedstocks:	
	Natural gas	Petroleum products
46 Switzerland	0.000	0.565
47 Rest of EFTA	0.000	0.994
48 Hungary	0.424	0.910
49 Poland	0.876	0.633
50 Rest of Central European Associates	0.481	0.496
51 Former Soviet Union	0.828	0.006
52 Turkey	0.713	0.667
53 Rest of Middle East	1.000	1.000
54 Morocco	0.000	0.000
55 Rest of North Africa	0.975	0.000
56 Botswana	0.000	0.593
57 Rest of South African Customs Union	0.000	0.593
58 Malawi	0.000	0.593
59 Mozambique	0.000	0.593
60 Tanzania	0.000	0.593
61 Zambia	0.000	0.593
62 Zimbabwe	0.000	0.593
63 Other Southern Africa	0.000	0.593
64 Uganda	0.000	0.593
65 Rest of Sub-Saharan Africa	0.000	0.593
66 Rest of World	0.813	0.570