Table A-2. National Carbon Monoxide Emissions Estimates, 1980, 1985, 1989–2000 (thousand short tons)

Source Category	1980	1985	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Fuel Combustion	7,302	8,485	7,443	5,510	5,856	6,155	5,586	5,519	5,934	4,349	4,336	4,337	4,348	4,590
FUEL COMB. ELEC. UTIL.	322	291	321	363	349	350	363	370	372	409	423	450	424	445
Coal	188	207	233	234	234	236	246	247	250	251	257	242	229	234
Oil	48	18	26	20	19	15	16	15	10	12	14	19	19	18
Gas	85	56	51	51	51	51	49	53	55	79	84	97	96	105
Other	NA	NA	NA	NA	NA	NA	NA	NA	NA	8	9	33	19	26
Internal Combustion	NA	10	11	57	45	47	51	55	58	58	60	60	61	62
FUEL COMB. INDUSTRIAL	750	670	672	879	920	955	1,043	1,041	1,056	1,191	1,163	1,151	1,175	1,221
Coal	58	86	87	105	101	102	101	100	98	110	109	106	109	110
Oil	35	47	46	74	60	64	66	66	71	54	52	51	52	55
Gas	418	257	271	226	284	300	322	337	345	340	339	336	340	361
Other	239	167	173	279	267	264	286	287	297	349	333	334	341	355
Internal Combustion	NA	113	96	195	208	227	268	251	245	337	330	324	334	340
FUEL COMB. OTHER	6,230	7,525	6,450	4,269	4,587	4,849	4,181	4,108	4,506	2,749	2,750	2,736	2,749	2,924
Commercial/Institutional Coal	13	14	15	14	14	15	15	15	15	14	14	15	15	15
Commercial/Institutional Oil	21	18	17	18	17	18	18	18	19	19	20	16	16	16
Commercial/Institutional Gas	26	42	49	44	44	51	53	54	54	64	65	63	68	69
Misc. Fuel Comb. (Except Residential)	NA	57	55	149	141	141	143	147	145	46	48	49	50	51
Residential Wood	5,992	7,232	6,161	3,781	4,090	4,332	3,679	3,607	3,999	2,351	2,351	2,351	2,351	2,526
fireplaces	5,992	7,232	6,161	3,781	4,090	4,332	3,679	3,607	3,999	1,043	1,043	1,043	1,043	1,118
woodstoves	NA	NA	NA	NA	NA	NA	NA	NA	NA	1,308	1,308	1,308	1,308	1,408
other	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Residential Other	178	162	153	262	281	292	274	268	273	255	252	242	249	246
Industrial Processes	9,250	7,215	7,013	5,852	5,740	5,683	5,898	5,839	5,790	7,187	7,348	7,362	7,343	7,521
CHEMICAL & ALLIED PRODUCT MFG	2,151	1,845	1,925	1,183	1,127	1,112	1,093	1,171	1,223	1,053	1,071	1,081	1,081	1,112
Organic Chemical Mfg	543	251	285	149	128	131	132	130	127	90	91	92	93	96
ethylene dichloride	17	0	0	0	0	0	0	0	0	0	0	0	0	0
maleic anhydride	103	16	16	3	3	4	4	4	4	0	0	0	0	0
cyclohexanol	37	5	6	0	0	0	0	1	1	0	0	0	0	0
other	386	230	264	146	125	127	128	125	123	89	90	92	92	95
Inorganic Chemical Mfg	191	89	95	133	129	130	131	135	134	120	121	123	125	128
pigments; TiO2 chloride process: reactor	34	77	84	119	119	119	119	119	119	117	118	120	122	125
other	157	12	12	14	11	12	13	16	15	3	3	3	3	3
Polymer & Resin Mfg	NA	19	18	3	6	5	5	5	5	5	5	5	5	5
Agricultural Chemical Mfg	NA	16	17	44	19	19	18	17	17	12	13	13	13	13
Paint, Varnish, Lacquer, Enamel Mfg	NA	NA	NA	0	0	0	0	0	0	0	0	0	0	0
Pharmaceutical Mfg	NA	0	0	0	0	0	0	0	0	0	0	0	1	1
Other Chemical Mfg	1,417	1,471	1,510	854	844	827	805	885	939	826	841	847	845	869
carbon black mfg	1,417	1,078	1,112	798	756	736	715	793	845	796	811	818	815	839
carbon black furnace: fugitives	NA	155	180	17	54	57	60	63	65	4	4	4	4	4
other	NA	238	219	39	35	34	30	30	29	26	26	26	26	26
METALS PROCESSING	2,246	2,223	2,132	2,640	2,571	2,496	2,536	2,475	2,380	1,604	1,709	1,702	1,673	1,735
Nonferrous Metals Processing	842	694	677	436	438	432	423	421	424	459	475	465	451	461
aluminum anode baking	421	41	41	41	47	41	41	41	41	22	23	23	23	23
prebake aluminum cell	421	257	254	260	260	260	260	260	260	277	288	281	271	278
other	NA	396	382	135	131	131	122	120	123	160	164	160	157	160

Table A-2. National Carbon Monoxide Emissions Estimates, 1980, 1985, 1989–2000 (thousand short tons) (cont.)

Source Category	1980	1985	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Ferrous Metals Processing	1,404	1,523	1,449	2,163	2,108	2,038	2,089	2,029	1,930	1,101	1,189	1,193	1,181	1,233
basic oxygen furnace	80	694	662	594	731	767	768	677	561	268	296	301	301	316
carbon steel electric arc furnace	280	19	18	45	54	49	58	61	65	60	65	66	66	69
coke oven charging	43	9	9	14	16	17	7	7	8	4	4	4	4	4
gray iron cupola	340	302	280	124	118	114	121	128	120	111	115	111	106	108
iron ore sinter plant windbox	600	304	293	211	211	211	211	211	211	46	50	50	50	52
other	61	194	187	1,174	979	880	924	945	966	612	659	661	654	683
Metals Processing NEC	NA	6	6	40	25	26	25	25	25	44	46	44	41	41
PETROLEUM & RELATED INDUSTRIES	1,723	462	436	333	345	371	371	338	348	354	367	366	366	369
Oil & Gas Production	NA	11	8	38	18	21	22	35	34	27	27	27	27	28
Petroleum Refineries & Related Industries	1,723	449	427	291	324	345	344	299	309	319	332	331	332	333
fluid catalytic cracking units	1,680	403	390	284	315	333	328	286	299	308	320	319	320	321
other	44	46	37	7	9	13	17	13	10	11	12	12	12	12
Asphalt Manufacturing	NA	2	2	3	4	5	5	5	5	8	8	8	7	7
OTHER INDUSTRIAL PROCESSES	830	694	716	537	548	544	594	600	624	561	582	590	599	620
Agriculture, Food, & Kindred Products	NA	0	0	3	3	3	3	2	6	4	4	4	4	4
Textiles, Leather, & Apparel Products	NA	0	0	0	0	0	0	0	0	0	0	0	0	0
Wood, Pulp & Paper, & Publishing Prod.	798	627	655	473	461	449	453	461	484	356	370	378	388	401
sulfate pulping: rec. furnace/evaporator	NA	475	497	370	360	348	350	355	370	274	285	291	299	309
sulfate (kraft) pulping: lime kiln	798	140	146	87	81	75	78	76	82	50	52	53	55	57
other	NA	12	13	16	21	25	24	30	32	32	33	34	34	36
Rubber & Miscellaneous Plastic Products	NA	0	0	0	0	0	0	0	0	0	0	0	0	0
Mineral Products	32	43	43	54	77	85	131	131	127	180	186	186	185	192
Machinery Products	NA	0	0	0	0	0	0	0	0	1	1	1	1	1
Electronic Equipment	NA	18	12	2	2	2	2	2	2	0	0	0	0	0
Transportation Equipment	NA	0	0	0	0	0	0	0	0	0	0	0	0	0
Miscellaneous Industrial Processes	NA	6	5	5	5	6	4	4	4	19	19	20	20	20
SOLVENT UTILIZATION	NA	2	2	5	5	5	5	5	6	1	2	2	2	2
Degreasing	NA	1	1	0	0	0	0	0	0	0	0	0	0	0
Graphic Arts	NA	0	0	0	0	0	0	0	0	0	0	0	0	0
Dry Cleaning	NA	NA	NA	0	0	0	0	1	1	0	0	0	0	0
Surface Coating	NA	0	1	0	1	1	1	1	1	1	1	1	1	1
Other Industrial	NA	0	0	4	4	4	4	4	4	0	0	0	0	0
Nonindustrial	NA	NA	NA	0	0	0	0	0	0	0	0	0	0	0
Solvent Utilization NEC	NA	NA	NA	NA	NA	NA	NA	NA	NA	0	0	0	0	0
STORAGE & TRANSPORT	NA	49	55	76	28	17	51	24	25	70	71	72	72	74
Bulk Terminals & Plants	NA	0	0	0	2	0	4	4	4	0	0	0	0	0
Petroleum & Petroleum Product Storage	NA	0	0	0	12	0	32	4	4	0	0	0	0	0
Petroleum & Petroleum Product Transport	NA	0	0	0	0	0	0	0	0	0	0	0	0	0
Service Stations: Stage I	NA	NA	NA	NA	NA	NA	NA	NA	NA	0	0	0	0	0
Service Stations: Stage II	NA	NA	NA	NA	NA	NA	NA	0	0	0	0	0	0	0
Organic Chemical Storage	NA	42	49	74	13	13	13	13	13	68	69	70	70	72
Organic Chemical Transport	NA	NA	NA	0	0	0	0	0	0	0	0	0	0	0
Inorganic Chemical Storage	NA	0	0	0	0	0	0	0	0	0	0	0	0	0
Bulk Materials Storage	NA	6	5	1	1	3	2	3	3	1	1	1	1	1