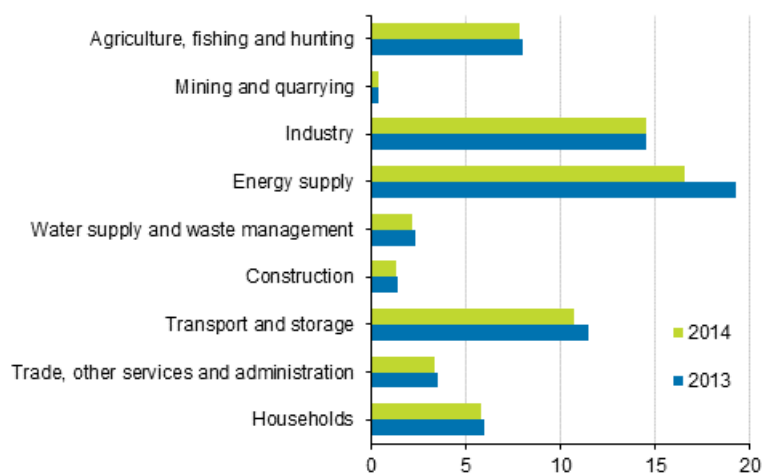


Emissions into air by industry 2014

Greenhouse gas emissions by Finns decreased in 2014

Greenhouse gas emissions produced by Finnish residents in Finland and abroad amounted to nearly 63 million tonnes in 2014. The emissions decreased by six per cent from the previous year. In energy supply, the use of fossil fuels was replaced with renewable energy and electricity imports, which decreased the greenhouse gas emissions of the industry by 14 per cent. Fine particulate matter emissions also declined by almost one-fifth in the industry. The share of energy supply in greenhouse gas emissions was biggest, close on 26.5 per cent, the share of manufacturing was 23 per cent, that of transportation and storage 17 per cent, and that of agriculture 12 per cent. Households' share of greenhouse gas emissions was nine per cent.

Greenhouse gas emissions by industry 2013 and 2014, million tonnes CO₂ equivalent



The use of biofuels, particularly renewable diesel, increased in road transport. This is visible as an increase in CO₂ emissions from biomass, especially in construction, land transport and services. In construction and land transport, the amount of CO₂ emissions from biomass have more than doubled. Correspondingly, greenhouse gas emissions have declined by six per cent in construction and by 12 per cent in land transport. CO₂ emissions from biomass are not included in the total volume of greenhouse gas emissions.

In energy supply the use of hard coal, natural gas and oil decreased and was replaced with renewable energy and electricity imports. As a result, greenhouse gas emissions in energy supply declined by 14 per cent and fine particulate matter emissions by 19 per cent.

Emissions into air by industry groups 2014, tonnes

	Greenhouse gases (CO ₂ -foss, CH ₄ , N ₂ O, HFC, PFC, SF ₆) CO ₂ -eq.	CO ₂ emissions from biomass (CO ₂ -bio)	Particles, < 10 m (PM 10)	Carbon monoxide (CO)	Ammonia (NH ₃)
Agriculture, fishing and aquaculture, hunting	7 544 004	728 430	2 839	17 497	33 574
Forestry	321 616	7 933	122	6 677	4
Mining and quarrying	422 865	3 734	2 960	1 527	0 ¹⁾
Food industry	372 637	29 361	109	229	0
Forest industry	3 174 648	19 721 152	2 456	23 907	22
Oil refining and manufacture of chemicals	4 443 770	119 101	497	1 307	415
Manufacture of basic metals and fabricated metal products	4 996 454	2 605	422	1 705	125
Other industries	1 494 169	83 311	246	334	209
Energy management	16 577 721	10 853 544	1 107	19 178	6
Water supply and waste management	2 203 101	275 959	108	902	504
Construction	1 315 506	100 698	1 114	7 636	53
Trade	894 702	38 817	66	794	7
Land transport	4 206 674	796 596	2 679	7 096	380
Water transport	3 119 405	164 380	2 381	9 517	3
Air transport	3 296 573	23 812	271	8 027	18
Support activities for transportation, postal activities	99 515	17 766	341	583	3
Real estate activities	813 162	2 805 193	5 197	54 395	388
Other service activities and administration	1 700 124	243 151	1 044	26 696	129
Households	5 799 851	3 349 826	10 699	170 345	1 087
TOTAL	62 796 503	39 365 375	34 669	358 360	36 935

1) Magnitude less than half of unit employed.

Statistics Finland's statistics on emissions into air by industry also include sulphur and nitrogen dioxide emissions as well as emissions of non-methane volatile organic compounds (NMVOC).

The statistics on emissions into air by industry are calculated according to the EU Regulation on environmental accounts. The industrial classification and division used in the statistics differ from the sector division used in the reporting of the greenhouse gas emissions to the UNFCCC. The statistics do not take into consideration the amount of carbon dioxide absorbed by forest or other vegetation either.

Differing from the greenhouse gas inventory and greenhouse gas reporting, the statistics on emissions into air by industry also contain Finnish residents' emissions from land, water and air transport abroad. In turn, emissions by foreign citizens from transport on Finnish territory are subtracted from the emissions into air by industry. The definition of transport corresponds with the methods of national accounts in which households' transport is included in private consumption. Due to definitional differences, the total volume of greenhouse gas emissions by industry is higher than in the Greenhouse Gas Inventory reported to the UNFCCC.

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Appendix tables

Appendix table 1. Greenhouse gas emissions (CO₂-fos, CH₄, N₂O, HFC, PFC, SF₆) by industry as carbon dioxide equivalents (CO₂ eq.) in 2008 to 2014, tonnes

	2008	2009	2010	2011	2012	2013	2014
A Agriculture, forestry and fishing	8 010 742	7 946 295	8 132 909	7 896 344	7 898 403	7 991 416	7 865 620
A 01, 03 Agriculture, fishing and aquaculture, hunting	7 703 567	7 661 788	7 830 971	7 582 649	7 582 334	7 667 868	7 544 004
A 02 Forestry	307 175	284 506	301 937	313 694	316 068	323 548	321 616
B Mining and quarrying	346 776	325 989	447 977	495 655	471 411	398 114	422 865
C Manufacturing	19 498 876	15 398 585	16 756 982	16 459 117	14 727 746	14 552 432	14 481 679
C 10 - 12 Food industry, etc.	268 347	359 027	384 315	378 133	340 726	360 077	372 637
C 16, 17 Forest industry	4 208 514	3 473 365	3 944 107	3 644 626	3 257 082	3 244 132	3 174 648
C 19, 20 Oil refining and manufacture of chemicals	6 367 562	5 334 260	4 706 859	4 726 366	4 441 274	4 575 561	4 443 770
C 24, 25 Manufacture of basic metals and fabricated metal products	6 490 900	4 757 925	6 012 544	5 936 790	5 121 603	4 807 694	4 996 454
C 13 - 15, 18, 21 - 23, 26 - 33 Other industries	2 163 551	1 474 006	1 709 155	1 773 200	1 567 060	1 564 965	1 494 169
D Energy management	21 218 416	22 451 770	27 864 642	21 664 397	17 855 027	19 260 012	16 577 721
E Water supply and waste management	2 579 653	2 538 568	2 537 991	2 435 322	2 448 578	2 352 490	2 203 101
F Construction	1 338 018	1 337 230	1 595 458	1 498 049	1 421 270	1 399 555	1 315 506
G Trade	673 707	701 069	980 743	825 031	808 901	846 497	894 702
H Transportation and storage	11 520 206	9 861 595	10 659 115	10 746 422	11 007 713	11 511 140	10 722 168
H 49 Land transport	4 769 375	4 572 286	4 703 208	4 720 155	4 895 170	4 777 588	4 206 674
H 50 Water transport	2 958 184	2 467 474	2 939 625	2 440 430	3 068 240	3 291 652	3 119 405
H 51 Air transport	3 560 753	2 638 873	2 892 672	3 488 344	2 937 432	3 338 233	3 296 573
H 52, 53 Support activities for transportation, postal activities	231 893	182 960	123 609	97 491	106 870	103 665	99 515
L Real estate activities	940 161	936 666	1 146 232	946 847	912 860	840 700	813 162
I - K, M - S Other service activities and administration	1 694 443	1 666 586	1 949 965	1 863 732	1 791 263	1 821 270	1 700 124
Households	7 325 444	6 886 719	6 908 145	6 149 996	6 117 218	6 024 858	5 799 851
TOTAL	75 146 446	70 051 075	78 980 164	70 980 916	65 460 395	66 998 489	62 796 503

Appendix table 2. CO2 emissions from biomass (CO2-bio) by industry in 2008 to 2014, tonnes

	2008	2009	2010	2011	2012	2013	2014
A Agriculture, forestry and fishing	566 579	641 351	751 090	648 895	762 238	850 565	736 363
A 01, 03 Agriculture, fishing and aquaculture, hunting	565 656	637 579	745 427	640 994	757 191	846 918	728 430
A 02 Forestry	922	3 771	5 663	7 900	5 047	3 646	7 933
B Mining and quarrying	0 ¹⁾	2 246	4 246	5 896	5 066	5 562	3 734
C Manufacturing	19 581 780	15 794 599	18 596 537	18 543 449	18 914 680	19 790 211	19 955 532
C 10 - 12 Food industry, etc.	34 426	25 518	26 281	27 023	29 437	24 211	29 361
C 16, 17 Forest industry	19 445 703	15 638 931	18 411 012	18 362 202	18 720 945	19 565 794	19 721 152
C 19, 20 Oil refining and manufacture of chemicals	71 060	89 612	90 709	78 218	80 198	114 702	119 101
C 24, 25 Manufacture of basic metals and fabricated metal products	238	1 387	1 904	1 404	2 134	2 068	2 605
C 13 - 15, 18, 21 - 23, 26 - 33 Other industries	30 351	39 149	66 629	74 599	81 965	83 434	83 311
D Energy management	7 713 305	7 331 762	9 273 248	9 874 755	10 432 573	10 697 215	10 853 544
E Water supply and waste management	104 687	127 766	154 915	161 484	216 277	300 402	275 959
F Construction	3 138	20 810	31 718	43 464	31 173	37 738	100 698
G Trade	15 553	16 210	39 877	27 142	32 098	31 503	38 817
H Transportation and storage	204 868	332 969	327 853	404 699	409 939	486 860	1 002 555
H 49 Land transport	45 576	134 517	127 110	212 893	210 243	302 008	796 596
H 50 Water transport	112 926	152 498	171 082	164 851	170 314	156 243	164 380
H 51 Air transport	6 649	9 839	8 886	12 139	13 648	13 806	23 812
H 52, 53 Support activities for transportation, postal activities	39 715	36 113	20 774	14 815	15 733	14 801	17 766
L Real estate activities	2 371 516	2 507 798	3 050 629	2 957 171	2 898 196	2 766 588	2 805 193
I - K, M - S Other service activities and administration	108 799	119 646	135 907	160 074	168 662	171 252	243 151
Households	3 566 778	3 824 233	3 988 033	3 120 392	3 629 853	3 191 263	3 349 826
TOTAL	34 237 008	30 719 395	36 354 059	35 947 426	37 500 760	38 329 163	39 365 375

1) Magnitude less than half of unit employed.

Appendix table 3. Ammonia emissions (NH₃) by industry in 2008 to 2014, tonnes

	2008	2009	2010	2011	2012	2013	2014
A Agriculture, forestry and fishing	34 026	33 133	33 402	33 668	33 347	33 798	33 578
A 01, 03 Agriculture, fishing and aquaculture, hunting	34 020	33 128	33 397	33 663	33 343	33 794	33 574
A 02 Forestry	6	5	4	5	4	4	4
B Mining and quarrying	0 ¹⁾	0	0	0	0	0	0
C Manufacturing	878	940	752	669	684	632	773
C 10 - 12 Food industry, etc.	0	0	0	0	0	0	0
C 16, 17 Forest industry	82	157	218	114	31	53	22
C 19, 20 Oil refining and manufacture of chemicals	198	475	255	258	332	320	415
C 24, 25 Manufacture of basic metals and fabricated metal products	389	193	126	92	152	83	125
C 13 - 15, 18, 21 - 23, 26 - 33 Other industries	207	113	152	204	167	175	209
D Energy management	0	1	1	1	4	3	6
E Water supply and waste management	494	498	496	503	510	508	504
F Construction	64	70	77	68	58	55	53
G Trade	7	5	10	8	7	7	7
H Transportation and storage	685	561	443	479	450	425	407
H 49 Land transport	649	524	413	448	421	397	380
H 50 Water transport	3	4	4	5	4	3	3
H 51 Air transport	20	22	19	21	21	19	18
H 52, 53 Support activities for transportation, postal activities	12	8	4	3	4	3	3
L Real estate activities	365	388	492	468	520	495	388
I - K, M - S Other service activities and administration	142	149	172	159	137	135	129
Households	1 335	1 414	1 484	1 225	1 347	1 231	1 087
TOTAL	38 002	37 163	37 333	37 251	37 070	37 295	36 935

1) Magnitude less than half of unit employed.

Appendix table 4. Sulphur dioxide emissions (SO₂) by industry in 2008 to 2014, tonnes

	2008	2009	2010	2011	2012	2013	2014
A Agriculture, forestry and fishing	1 296	1 293	1 335	1 130	1 006	997	781
A 01, 03 Agriculture, fishing and aquaculture, hunting	1 294	1 291	1 333	1 128	1 004	996	780
A 02 Forestry	1	1	1	1	1	1	1
B Mining and quarrying	202	118	172	176	189	142	129
C Manufacturing	33 592	26 017	27 125	27 074	21 776	19 996	19 423
C 10 - 12 Food industry, etc.	547	948	838	903	651	712	777
C 16, 17 Forest industry	7 226	5 299	5 854	4 749	5 180	5 121	4 615
C 19, 20 Oil refining and manufacture of chemicals	13 851	10 386	11 097	11 951	9 450	8 637	9 371
C 24, 25 Manufacture of basic metals and fabricated metal products	9 680	8 031	8 034	8 449	5 347	4 239	3 960
C 13 - 15, 18, 21 - 23, 26 - 33 Other industries	2 285	1 351	1 300	1 020	1 147	1 284	698
D Energy management	26 015	25 479	31 497	26 218	22 242	21 517	18 333
E Water supply and waste management	80	64	89	38	38	46	58
F Construction	126	130	148	98	115	124	123
G Trade	50	51	126	78	96	88	88
H Transportation and storage	24 459	18 438	21 105	16 672	21 872	24 210	23 268
H 49 Land transport	116	125	96	78	87	63	63
H 50 Water transport	23 303	17 532	20 210	15 666	20 994	23 257	22 323
H 51 Air transport	905	664	732	884	742	847	839
H 52, 53 Support activities for transportation, postal activities	133	116	65	43	47	42	42
L Real estate activities	988	997	1 248	1 078	1 044	973	965
I - K, M - S Other service activities and administration	334	347	383	376	441	415	406
Households	1 294	1 335	1 388	996	1 160	1 003	994
TOTAL	88 441	74 274	84 620	73 938	69 985	69 514	64 573

Appendix table 5. Nitrogen dioxide emissions (NO2) by industry in 2008 to 2014, tonnes

	2008	2009	2010	2011	2012	2013	2014
A Agriculture, forestry and fishing	12 459	11 727	11 439	10 733	10 634	10 429	9 567
A 01, 03 Agriculture, fishing and aquaculture, hunting	10 596	10 186	9 988	9 394	9 422	9 305	8 602
A 02 Forestry	1 862	1 540	1 451	1 338	1 211	1 124	964
B Mining and quarrying	2 933	2 516	2 574	2 541	2 421	2 213	2 075
C Manufacturing	38 690	31 290	33 934	33 049	31 696	32 397	31 646
C 10 - 12 Food industry, etc.	535	607	561	595	503	486	543
C 16, 17 Forest industry	21 654	16 809	19 692	18 944	19 192	19 514	19 459
C 19, 20 Oil refining and manufacture of chemicals	6 709	6 866	5 628	5 436	4 895	5 351	4 469
C 24, 25 Manufacture of basic metals and fabricated metal products	4 727	3 782	4 640	4 516	4 035	3 712	4 290
C 13 - 15, 18, 21 - 23, 26 - 33 Other industries	5 063	3 224	3 411	3 556	3 069	3 331	2 883
D Energy management	37 565	36 832	44 422	36 879	33 216	32 903	30 225
E Water supply and waste management	904	1 069	1 049	968	1 032	1 141	1 161
F Construction	11 407	10 464	11 311	10 445	9 567	8 833	8 240
G Trade	285	235	543	389	401	388	374
H Transportation and storage	90 201	72 784	79 998	71 042	80 602	85 395	80 994
H 49 Land transport	27 320	24 316	23 101	22 395	22 659	21 416	20 426
H 50 Water transport	51 388	39 870	47 854	37 987	48 907	53 889	50 623
H 51 Air transport	10 577	7 922	8 527	10 229	8 596	9 692	9 575
H 52, 53 Support activities for transportation, postal activities	914	676	514	429	437	397	367
L Real estate activities	3 331	3 469	4 177	3 803	3 693	3 497	3 496
I - K, M - S Other service activities and administration	6 804	6 519	7 013	6 553	5 869	5 687	5 332
Households	31 589	26 922	24 732	20 796	19 876	17 527	16 147
TOTAL	236 174	203 831	221 198	197 202	199 013	200 417	189 260

Appendix table 6. Carbon monoxide emissions (CO) by industry in 2008 to 2014, tonnes

	2008	2009	2010	2011	2012	2013	2014
A Agriculture, forestry and fishing	21 418	22 520	25 116	24 346	26 951	27 428	24 174
A 01, 03 Agriculture, fishing and aquaculture, hunting	16 452	17 219	19 162	16 663	19 136	20 649	17 497
A 02 Forestry	4 966	5 300	5 953	7 683	7 815	6 779	6 677
B Mining and quarrying	1 600	1 464	1 595	1 671	1 673	1 613	1 527
C Manufacturing	33 950	27 089	31 863	31 844	25 808	26 887	27 484
C 10 - 12 Food industry, etc.	249	226	244	249	237	226	229
C 16, 17 Forest industry	24 951	19 401	23 151	22 840	22 752	23 492	23 907
C 19, 20 Oil refining and manufacture of chemicals	1 567	1 485	1 447	1 492	1 342	1 343	1 307
C 24, 25 Manufacture of basic metals and fabricated metal products	6 696	5 611	6 618	6 851	1 120	1 470	1 705
C 13 - 15, 18, 21 - 23, 26 - 33 Other industries	485	364	401	409	355	354	334
D Energy management	16 655	16 673	19 671	18 560	18 839	18 327	19 178
E Water supply and waste management	1 576	1 479	1 145	945	933	1 034	902
F Construction	9 387	8 206	8 757	8 763	8 333	8 063	7 636
G Trade	1 006	678	1 114	785	855	807	794
H Transportation and storage	28 647	24 416	24 987	24 638	25 167	25 684	25 225
H 49 Land transport	8 436	7 838	7 395	7 257	7 502	7 225	7 096
H 50 Water transport	8 036	7 543	8 929	7 735	9 446	9 855	9 517
H 51 Air transport	10 191	7 758	7 866	9 036	7 567	7 996	8 027
H 52, 53 Support activities for transportation, postal activities	1 983	1 275	795	609	650	607	583
L Real estate activities	46 294	48 689	59 023	57 314	56 301	53 786	54 395
I - K, M - S Other service activities and administration	40 138	32 069	32 162	29 299	28 029	27 904	26 696
Households	227 653	221 204	213 491	184 181	187 543	175 206	170 345
TOTAL	428 329	404 491	418 929	382 351	380 439	366 745	358 360

Appendix table 7. Particulate matter emissions (PM 10) by industry in 2008 to 2014, tonnes

	2008	2009	2010	2011	2012	2013	2014
A Agriculture, forestry and fishing	3 257	3 124	3 079	3 136	3 226	3 541	2 962
A 01, 03 Agriculture, fishing and aquaculture, hunting	3 122	2 997	2 945	2 994	3 084	3 406	2 839
A 02 Forestry	135	126	133	142	141	135	122
B Mining and quarrying	1 451	2 420	2 147	2 040	1 309	3 015	2 960
C Manufacturing	4 618	2 588	3 846	4 080	3 889	3 542	3 732
C 10 - 12 Food industry, etc.	121	46	102	192	132	97	109
C 16, 17 Forest industry	3 033	1 981	2 257	2 078	2 585	2 321	2 456
C 19, 20 Oil refining and manufacture of chemicals	309	229	173	401	510	537	497
C 24, 25 Manufacture of basic metals and fabricated metal products	977	228	1 181	1 162	424	358	422
C 13 - 15, 18, 21 - 23, 26 - 33 Other industries	176	102	130	245	235	227	246
D Energy management	1 976	1 678	1 940	1 698	1 439	1 366	1 107
E Water supply and waste management	101	138	114	95	114	128	108
F Construction	2 045	1 743	1 967	1 829	1 720	1 192	1 114
G Trade	68	63	136	98	108	87	66
H Transportation and storage	7 435	6 193	6 089	6 013	6 350	5 917	5 674
H 49 Land transport	3 925	3 310	2 736	3 070	3 052	2 745	2 679
H 50 Water transport	2 266	1 840	2 228	1 721	2 355	2 594	2 381
H 51 Air transport	337	297	297	332	279	277	271
H 52, 53 Support activities for transportation, postal activities	907	744	827	888	663	299	341
L Real estate activities	7 622	8 263	10 233	10 135	10 066	9 828	5 197
I - K, M - S Other service activities and administration	1 115	1 169	1 412	1 340	1 273	1 148	1 044
Households	16 223	17 611	18 835	15 453	17 356	15 777	10 699
TOTAL	45 916	44 993	49 803	45 921	46 854	45 546	34 669

Appendix table 8. Particulate matter emissions (PM 2.5) by industry in 2008 to 2014, tonnes

	2008	2009	2010	2011	2012	2013	2014
A Agriculture, forestry and fishing	1 300	1 233	1 184	1 221	1 161	1 246	1 320
A 01, 03 Agriculture, fishing and aquaculture, hunting	1 185	1 125	1 070	1 083	1 039	1 129	1 216
A 02 Forestry	114	107	114	138	121	116	104
B Mining and quarrying	1 004	1 695	1 488	1 406	901	1 504	1 402
C Manufacturing	2 916	1 707	2 237	2 498	2 787	2 462	2 678
C 10 - 12 Food industry, etc.	77	25	62	121	89	59	66
C 16, 17 Forest industry	2 225	1 431	1 607	1 462	1 915	1 624	1 762
C 19, 20 Oil refining and manufacture of chemicals	143	103	81	201	287	319	301
C 24, 25 Manufacture of basic metals and fabricated metal products	386	89	415	538	344	294	358
C 13 - 15, 18, 21 - 23, 26 - 33 Other industries	83	57	71	174	151	164	189
D Energy management	677	598	690	555	514	500	383
E Water supply and waste management	60	82	69	56	72	74	69
F Construction	1 234	1 041	1 108	1 114	978	974	904
G Trade	35	32	67	49	53	41	40
H Transportation and storage	4 952	4 019	4 055	3 740	4 271	4 325	4 179
H 49 Land transport	2 402	2 014	1 662	1 841	1 823	1 626	1 580
H 50 Water transport	2 108	1 643	2 016	1 518	2 145	2 431	2 331
H 51 Air transport	286	237	242	269	212	218	216
H 52, 53 Support activities for transportation, postal activities	155	124	134	110	90	48	51
L Real estate activities	7 308	7 931	9 815	9 757	9 697	9 473	5 001
I - K, M - S Other service activities and administration	689	706	867	808	749	669	645
Households	13 965	15 125	16 179	13 039	14 816	13 465	8 556
TOTAL	34 145	34 173	37 764	34 248	36 004	34 739	25 181

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Source: Emissions into air by industry 2014, Statistics Finland