

Table C-1: Total Emissions & Potential Emissions Reductions from Energy Efficiency Improvements to All Fuel Types

State	Estimated Number of Boilers	Cd	Dioxin	Hg	1,4-Dichloro benzene	16-PAHs	As	Benzene	Cr	HCl	Pb	PM	CO	SO ₂	
Total Air Emissions (lbs/year)															
IL	5,769	1,955	0.3	1,373	162	60,042	10,262	110,369	13,302	4,253,053	16,027	79,864,288	2,357,656,142	409,073,692	
IN	1,561	720	0.2	570	77	16,088	4,234	88,804	6,746	1,791,802	7,210	34,878,452	569,540,267	169,119,375	
MI	7,570	3,021	0.7	1,690	297	154,103	15,618	122,382	19,783	6,426,369	24,074	114,484,041	6,317,085,220	536,513,057	
MN	1,348	906	0.3	758	88	20,168	5,372	140,171	8,607	2,330,100	9,628	49,143,118	685,878,998	221,305,305	
NY	900	230	0.1	423	18	8,519	1,259	83,606	3,428	810,026	3,740	29,738,251	230,955,102	83,652,593	
OH	802	956	0.2	647	85	13,616	5,913	40,060	8,820	2,495,926	9,621	50,196,983	443,770,360	189,920,658	
PA	3,150	3,010	0.8	3,202	423	59,181	19,367	119,684	25,675	9,131,445	30,526	165,223,533	1,948,520,529	814,464,710	
WI	3,422	607	0.4	383	71	28,980	3,095	231,476	4,766	1,513,503	7,315	38,858,613	1,022,493,970	151,975,890	
Total	24,522	11,404	3.0	9,047	1,222	360,697	65,121	936,552	91,127	28,752,224	108,141	562,387,278	13,575,900,586	2,576,025,280	

Potential Emission Reduction for Energy Efficiency Improvements (lbs/year)															
1%		114	0.03	90	12	3,607	651	9,366	911	287,522	1,081	5,623,873	135,759,006	25,760,253	
2%		228	0.06	181	24	7,214	1,302	18,731	1,823	575,044	2,163	11,247,746	271,518,012	51,520,506	
5%		570	0.15	452	61	18,035	3,256	46,828	4,556	1,437,611	5,407	28,119,364	678,795,029	128,801,264	
10%		1,140	0.30	905	122	36,070	6,512	93,655	9,113	2,875,222	10,814	56,238,728	1,357,590,059	257,602,528	

Notes:

1. Estimated number of boilers based on US EPA Emissions Test Database, Population Database, and Materials Analysis Database used in the Development of the Industrial/Commercial Boiler NESHAP (12-14-99)
2. Average total emissions are calculated from emission factors developed by the U.S. EPA for a range of boiler types using all types of fuel.

Table C-2: Total Emissions & Potential Emissions Reductions from Energy Efficiency Improvements for Coal Fired Industrial Boilers														
State	Estimated Number of Boilers	Cd	Dioxin	Hg	1,4-Dichloro benzene	16-PAHs	As	Benzene	Cr	HCl	Pb	PM	CO	SO ₂
Total Air Emissions (lbs/year)														
IL	172	1,318	0.3	667	153	1,574	9,125	1,452	10,024	3,895,820	12,835	59,827,124	3,481,701	328,967,768
IN	176	518	0.1	274	63	645	3,586	595	3,939	1,567,452	5,044	23,787,926	1,425,673	134,900,142
MI	357	1,998	0.4	1,045	239	2,463	13,833	2,272	15,195	6,045,733	19,456	91,359,022	5,447,730	516,486,576
MN	71	648	0.1	327	75	771	4,486	711	4,927	1,917,894	6,309	29,412,010	1,704,397	161,225,862
NY	34	102	0.0	47	11	112	708	103	778	297,943	996	4,670,026	248,062	23,573,150
OH	293	793	0.1	355	82	842	5,491	777	6,032	2,219,560	7,724	35,860,856	1,861,854	175,103,581
PA	329	2,605	0.6	1,577	359	3,694	18,038	3,408	19,814	8,492,366	25,371	120,964,745	8,169,902	778,262,354
WI	99	276	0.1	139	32	328	1,914	303	2,103	846,456	2,692	12,786,315	725,359	69,373,993
Total	1,531	8,258	1.7	4,430	1,014	10,429	57,182	9,621	62,811	25,283,224	80,428	378,668,024	23,064,678	2,187,893,425

Potential Emission Reduction for Energy Efficiency Improvements (lbs/year)														
1%		114	0.03	90	12	3,607	651	9,366	911	287,522	1,081	5,623,873	135,759,006	25,760,253
2%		228	0.06	181	24	7,214	1,302	18,731	1,823	575,044	2,163	11,247,746	271,518,012	51,520,506
5%		570	0.15	452	61	18,035	3,256	46,828	4,556	1,437,611	5,407	28,119,364	678,795,029	128,801,264
10%		1,140	0.30	905	122	36,070	6,512	93,655	9,113	2,875,222	10,814	56,238,728	1,357,590,059	257,602,528

Notes:

1. Estimated number of boilers based on US EPA Emissions Test Database, Population Database, and Materials Analysis Database used in the Development of the Industrial/Commercial Boiler NESHAP (12-14-99)
2. Average total emissions are calculated from emission factors developed by the U.S. EPA for a range of boiler types using coal as the primary fuel.

Table C-3: Total Emissions & Potential Emissions Reductions from Energy Efficiency Improvements to Distillate Liquid Fossil Fuel Fired Industrial Boilers

State	Estimated Number of Boilers	Cd	Dioxin	Hg	1,4-Dichloro benzene (3)	16-PAHs	As	Benzene	Cr	HCl	Pb	PM	CO	SO ₂ (3)
Total Air Emissions (lbs/year)														
IL	429	7	0.01	0	0	2,653	20	792	24	3,201	73	380,960	1,510,274	0
IN	204	3	0.00	0	0	1,152	8	344	10	1,447	31	178,913	655,966	0
MI	374	13	0.02	1	0	5,011	35	1,496	43	6,444	129	790,399	2,852,295	0
MN	208	5	0.01	0	0	1,824	13	545	16	2,270	48	270,472	1,038,603	0
NY	198	4	0.01	0	0	1,815	12	542	15	2,409	44	293,408	1,033,310	0
OH	126	5	0.01	0	0	1,673	12	499	15	2,077	46	258,073	952,170	0
PA	571	16	0.03	1	0	6,397	44	1,910	53	8,196	161	967,771	3,641,778	0
WI	454	8	0.01	1	0	3,009	21	899	26	3,781	78	449,729	1,712,809	0
Total	2,564	61	0.10	4	0	23,535	166	7,028	201	29,825	610	3,589,725	13,397,206	0

Potential Emission Reduction for Energy Efficiency Improvements (lbs/year)														
1%		114	0.03	90	12	3,607	651	9,366	911	287,522	1,081	5,623,873	135,759,006	25,760,253
2%		228	0.06	181	24	7,214	1,302	18,731	1,823	575,044	2,163	11,247,746	271,518,012	51,520,506
5%		570	0.15	452	61	18,035	3,256	46,828	4,556	1,437,611	5,407	28,119,364	678,795,029	128,801,264
10%		1,140	0.30	905	122	36,070	6,512	93,655	9,113	2,875,222	10,814	56,238,728	1,357,590,059	257,602,528

Notes:

1. Estimated number of boilers based on US EPA Emissions Test Database, Population Database, and Materials Analysis Database used in the Development of the Industrial/Commercial Boiler NESHAP (12-14-99)
2. Average total emissions are calculated from emission factors developed by the U.S. EPA for a range of boiler types using distillate liquid fossil fuel as the primary fuel.
3. No Emission Factor

Table C-4: Total Emissions & Potential Emissions Reductions from Energy Efficiency Improvements to Residual Liquid Fossil Fuel Fired Industrial Boilers														
State	Estimated Number of Boilers	Cd	Dioxin	Hg	1,4-Dichloro benzene (3)	16-PAHs	As	Benzene	Cr	HCl	Pb	PM	CO	SO ₂ (3)
Total Air Emissions (lbs/year)														
IL	290	267	0.02	626	0	1,490	234	640	1,366	4,539	709	7,651,393	534,805	0
IN	84	3	0.01	248	0	601	100	258	582	1,966	302	3,219,872	215,705	0
MI	133	13	0.01	565	0	1,330	203	571	1,185	3,748	615	6,829,020	477,535	0
MN	82	5	0.01	342	0	801	121	344	704	2,208	366	4,078,106	287,498	0
NY	246	4	0.01	262	0	628	102	270	598	1,993	310	3,334,590	225,476	0
OH	64	5	0.01	230	0	541	83	232	484	1,536	251	2,780,503	194,232	0
PA	396	16	0.04	1,491	0	3,595	586	1,544	3,422	11,507	1,776	19,002,123	1,290,336	0
WI	141	8	0.00	121	0	282	42	121	245	802	127	1,391,501	101,379	0
Total	1,436	320	0.09	3,885	0	9,268	1,469	3,981	8,586	28,299	4,457	48,287,109	3,326,965	0

Potential Emission Reduction for Energy Efficiency Improvements (lbs/year)														
1%		114	0.03	90	12	3,607	651	9,366	911	287,522	1,081	5,623,873	135,759,006	25,760,253
2%		228	0.06	181	24	7,214	1,302	18,731	1,823	575,044	2,163	11,247,746	271,518,012	51,520,506
5%		570	0.15	452	61	18,035	3,256	46,828	4,556	1,437,611	5,407	28,119,364	678,795,029	128,801,264
10%		1,140	0.30	905	122	36,070	6,512	93,655	9,113	2,875,222	10,814	56,238,728	1,357,590,059	257,602,528

Notes:

1. Estimated number of boilers based on US EPA Emissions Test Database, Population Database, and Materials Analysis Database used in the Development of the Industrial/Commercial Boiler NESHAP (12-14-99)
2. Average total emissions are calculated from emission factors developed by the U.S. EPA for a range of boiler types using residual liquid fossil fuel as the primary fuel.
3. No Emission Factor

Table C-5: Total Emissions & Potential Emissions Reductions from Energy Efficiency Improvements to Natural Gas Fuel Fired Industrial Boilers														
State	Estimated Number of Boilers	Cd	Dioxin	Hg (3)	1,4-Dichloro benzene (3)	16-PAHs	As	Benzene	Cr	HCl	Pb	PM	CO	SO ₂ (3)
Total Air Emissions (lbs/year)														
IL	4,838	280	0.03	0	0	52,998	380	634	321	4,101	558	511,729	2,321,262,623	0
IN	1,064	72	0.01	0	0	12,530	98	150	82	982	143	133,451	548,785,699	0
MI	6,677	857	0.07	0	0	143,598	1,166	1,718	985	11,456	1,712	1,598,796	6,289,466,415	0
MN	944	77	0.01	0	0	14,900	105	178	88	1,157	154	139,707	652,610,002	0
NY	351	28	0.00	0	0	4,681	38	56	32	371	56	52,850	205,034,691	0
OH	297	50	0.01	0	0	9,850	69	118	58	770	101	91,105	431,430,703	0
PA	1,763	264	0.02	0	0	43,678	359	522	303	3,498	527	492,764	1,913,060,188	0
WI	2,657	122	0.01	0	0	22,296	166	267	140	1,722	244	226,069	976,538,311	0
Total	18,591	1,749	0.16	0	0	304,531	2,380	3,643	2,012	24,058	3,495	3,246,471	13,338,188,633	0

Potential Emission Reduction for Energy Efficiency Improvements (lbs/year)														
1%		114	0.03	90	12	3,607	651	9,366	911	287,522	1,081	5,623,873	135,759,006	25,760,253
2%		228	0.06	181	24	7,214	1,302	18,731	1,823	575,044	2,163	11,247,746	271,518,012	51,520,506
5%		570	0.15	452	61	18,035	3,256	46,828	4,556	1,437,611	5,407	28,119,364	678,795,029	128,801,264
10%		1,140	0.30	905	122	36,070	6,512	93,655	9,113	2,875,222	10,814	56,238,728	1,357,590,059	257,602,528

Notes:

1. Estimated number of boilers based on US EPA Emissions Test Database, Population Database, and Materials Analysis Database used in the Development of the Industrial/Commercial Boiler NESHAP (12-14-99)
2. Average total emissions are calculated from emission factors developed by the U.S. EPA for a range of boiler types using natural gas as the primary fuel.
3. No Emission Factor

Table C-6: Total Emissions & Potential Emissions Reductions from Energy Efficiency Improvements to Other Fuel Type Fired Industrial Boilers														
State	Estimated Number of Boilers	Cd	Dioxin	Hg	1,4-Dichloro benzene	16-PAHs	As	Benzene	Cr	HCl	Pb	PM	CO	SO ₂
Total Air Emissions (lbs/year)														
IL	40	83	0.0	79	9	1,327	503	106,851	1,567	345,392	1,852	11,493,082	30,866,738	80,105,924
IN	33	124	0.1	48	14	1,160	442	87,457	2,132	219,954	1,689	7,558,290	18,457,223	34,219,233
MI	26	141	0.1	79	58	1,701	381	116,324	2,375	358,988	2,162	13,906,803	18,841,244	20,026,481
MN	41	171	0.2	89	13	1,872	648	138,393	2,871	406,572	2,751	15,242,822	30,238,498	60,079,443
NY	68	91	0.0	114	7	1,282	398	82,634	2,005	507,310	2,333	21,387,377	24,413,562	60,079,443
OH	21	104	0.1	63	3	710	258	38,433	2,232	271,982	1,500	11,206,445	9,331,401	14,817,077
PA	91	109	0.1	133	64	1,817	341	112,300	2,083	615,878	2,691	23,796,130	22,358,326	36,202,357
WI	67	192	0.3	123	39	3,065	952	229,887	2,251	660,742	4,173	24,004,999	43,416,112	82,601,897
Total	387	1,015	0.9	728	208	12,934	3,923	912,279	17,517	3,386,819	19,151	128,595,950	197,923,105	388,131,855

Potential Emission Reduction for Energy Efficiency Improvements (lbs/year)														
1%		114	0.03	90	12	3,607	651	9,366	911	287,522	1,081	5,623,873	135,759,006	25,760,253
2%		228	0.06	181	24	7,214	1,302	18,731	1,823	575,044	2,163	11,247,746	271,518,012	51,520,506
5%		570	0.15	452	61	18,035	3,256	46,828	4,556	1,437,611	5,407	28,119,364	678,795,029	128,801,264
10%		1,140	0.30	905	122	36,070	6,512	93,655	9,113	2,875,222	10,814	56,238,728	1,357,590,059	257,602,528

Notes:

1. Estimated number of boilers based on US EPA Emissions Test Database, Population Database, and Materials Analysis Database used in the Development of the Industrial/Commercial Boiler NESHAP (12-14-99)
2. Average total emissions are calculated from emission factors developed by the U.S. EPA for a range of boiler types using primarily other types of fuel.
3. Other fuel types include bagasse, wood, non-fossil fuel liquids & solids, biomass, & others.