

AMERICA'S TOP FIFTY POWER PLANT MERCURY POLLUTERS

When the original Clean Air Act was passed in 1970, the electric utility industry persuaded Congress to not impose strict pollution controls on old power plants, because they would soon be replaced by newer state-of-the-art facilities. Yet despite the industry's promises, many of the nation's oldest and dirtiest power plants continue to operate.

Coal-fired power plants are the single largest source of mercury air pollution, accounting for roughly 40 percent of all mercury emissions nationwide, according to the U.S. Environmental Protection Agency.¹ Mercury is a highly toxic metal that, once released into the atmosphere, settles in lakes and rivers, where it moves up the food chain to humans. The Centers for Disease Control has found that roughly six percent of American women carry mercury concentrations at levels considered to put a fetus at risk of neurological damage.²

Pollution controls that dramatically reduce emissions are widely available, and already being used at many plants. But, until the public and policymakers hold the electric utility industry to its promised cleanup of the nation's oldest and dirtiest power plants, Americans will continue to bear unnecessary health and environmental costs.

The U.S. EPA's Toxics Release Inventory (TRI) tracks mercury emissions from approximately 475 electric generating facilities across the United States. It is too early to tell exactly how much mercury all power plants reported in 2007. However, based on a review of the reports filed by 108 of the largest power plants,³ the most recent, 2007, Toxics Release Inventory will bring disturbing news.

Highlights

As shown in *Table 1, Top 50 US Power Plant Mercury Emitters, By Total Pounds*, the top 50 most polluting power plants emitted 20 tons of the dangerous neurotoxin into the nation's air in 2007. While some plants are showing reductions since 2006, the majority of these 50 plants have actually increased mercury emissions as compared to 2006.

- Of the top 10 power plant mercury emitters, all but one reported an increase as compared to 2006.
- Southern Company's Miller plant, in Jefferson County, Alabama, is ranked number one in the nation for 2007, reporting nearly a ton of mercury air pollution in 2007. This represents a 13.57 percent increase over the plant's 2006 reported emissions.
- Eight Southern Company plants in Georgia and Alabama are ranked among the top 50 power plant mercury emitters.
- Texas power plants claim five out of 10 spots among the nation's highest mercury emitters.
- Dallas-based Luminant (formerly TXU) has four plants – Martin Lake, Monticello, Big Brown, and Sandow – ranked among the nation's top mercury emitters. Together, these

four plants emitted just over two and a half tons of mercury in 2007 – a staggering 5 percent of the national total.

- NRG's Limestone County, Texas plant emitted 1,196 pounds of mercury in 2007, a 10.74 percent increase over its reported 2006 emissions. The company plans to add a third coal-fired boiler at this facility.

Tables 2 and 3 rank the most polluting plants⁴ taking into account the relative size of the plant. *Table 2, Top 50 US Power Plant Mercury Emitters, By Pounds Per GWh*, ranks the top emitters based on mercury pollution per unit of electricity generated. *Table 3, Top 50 US Power Plant Mercury Emitters, By Pounds Per Billion Btu*, ranks these plants based on mercury pollution per unit of heat input (a measure of the amount of coal that the plant burned in 2007). These two tables are included because they confirm that the vast majority of the plants listed in Table 1 are, indeed, the “worst of the worst.” These tables also highlight power plants that – while not among the largest sources in terms of total pounds emitted – are nevertheless polluting at disproportionately high rates.

**Table 1. Top 50 US Power Plant Mercury Emitters
By Total Pounds Emitted (2007)**

Rank	Facility	Owner	County	State	lbs Hg Emitted	Δ from 2006
1	MILLER	Alabama Power (Southern Company)	JEFFERSON	AL	1,957.8	13.57%
2	MARTIN LAKE	Luminant (formerly TXU)	RUSK	TX	1,687	2.37%
3	MONTICELLO	Luminant (formerly TXU)	TITUS	TX	1,668	2.27%
4	SCHERER	Georgia Power (Southern Company)	MONROE	GA	1,582.4	5.34%
5	LABADIE	Ameren	FRANKLIN	MO	1,518	11.05%
6	BIG BROWN	Luminant (formerly TXU)	FREESTONE	TX	1,201	-3.30%
7	LIMESTONE	NRG	LIMESTONE	TX	1,196.5	10.74%
8	GASTON	Alabama Power (Southern Company)	SHELBY	AL	1,174.9	4.85%
9	H.W. PIRKEY	American Electric Power	HARRISON	TX	1,080	12.38%
10	SHERBURNE	Xcel Energy	SHERBURNE	MN	1,043	1.27%
11	CONESVILLE	American Electric Power	COSHOCTON	OH	1,004	30.73%
12	W.A. PARISH	NRG	FORT BEND	TX	963.9	3.89%
13	BOWEN STEAM	Georgia Power (Southern Company)	BARTOW	GA	944.6	-7.84%
14	MONROE	Detroit Edison (DTE Energy)	MONROE	MI	929.3	13.33%
15	COLSTRIP	PPL Montana LLC (PPL)	ROSEBUD	MT	890	5.95%
16	ROCKPORT	American Electric Power	SPENCER	IN	861	-13.81%
17	COAL CREEK	Great River Energy	MC LEAN	ND	851.1	-3.30%
18	KEYSTONE	Reliant Energy	ARMSTRONG	PA	846.4	-4.47%
19	J.M STUART STATION	Duke Energy/American Electric Power	ADAMS	OH	828	2.86%
20	BIG CAJUN 2	NRG	POINTE COUPEE	LA	800	-5.55%
21	AMOS PLANT	American Electric Power	PUTNAM	WV	766	-12.26%
22	JEFFREY	Westar Energy	POTTAWATOMIE	KS	736.8	5.98%
23	HATFIELD	Allegheny Energy	GREENE	PA	724	118.07%
24	SHAWVILLE	Reliant Energy	CLEARFIELD	PA	723	0.14%
25	BARRY	Alabama Power (Southern Company)	MOBILE	AL	711	1.76%

26	ROXBORO	Progress Energy	PERSON	NC	680	-2.86%
27	LARAMIE	Basin Electric	PLATTE	WY	660	1.54%
28	GORGAS	Alabama Power (Southern Company)	WALKER	AL	642.6	-11.16%
29	EME HOMER CITY	Midwest Generation (Edison International)	INDIANA	PA	628.2	2.86%
30	INDEPENDENCE	Entergy Corporation	INDEPENDENCE	AR	596	16.25%
31	ANTELOPE	Basin Electric	MERCER	ND	570	23.91%
32	MILTON R YOUNG	Minnkota Power Cooperative	OLIVER	ND	564	-6.00%
33	CORONADO	Salt River Project	APACHE	AZ	556	0.91%
34	CARDINAL	American Electric Power	JEFFERSON	OH	552	-7.38%
35	BRANDON SHORES & WAGNER	Constellation Energy	ANNE ARUNDEL	MD	550	1.85%
36	SANDOW	Luminant (formerly TXU)	MILAM	TX	541	13.42%
37	IPL PETERSBURG	Indianapolis Power & Light (AES Corporation)	PIKE	IN	540.3	6.84%
38	FOUR CORNERS	Arizona Public Service (Pinnacle West)	SAN JUAN	NM	540	-3.50%
39	BELEWS CREEK	Duke Energy	STOKES	NC	537.2	-2.62%
40	PLEASANT PRAIRIE	WE Energies (Wisconsin Energy Corporation)	KENOSHA	WI	535.5	-27.03%
41	RUSH ISLAND	Ameren	JEFFERSON	MO	533.7	-29.82%
42	NEWTON	Ameren	JASPER	IL	520.9	18.85%
43	WHITE BLUFF	Entergy Corporation	JEFFERSON	AR	518	-6.58%
44	YATES	Georgia Power (Southern Company)	COWETA	GA	516	27.38%
45	WANSLEY	Georgia Power (Southern Company)	HEARD	GA	508	20.67%
46	CONEMAUGH	Reliant Energy	INDIANA	PA	501	-6.00%
47	R. M. SCHAHFER	Northern Indiana Public Service Company (NI Source)	JASPER	IN	495	5.54%
48	COLUMBIA	Alliant Energy	COLUMBIA	WI	487	5.25%
49	LA CYGNE	Kansas City Power & Light (Great Plains Energy)	LINN	KS	486	-51.35%
50	KINGSTON	Tennessee Valley Authority	ROANE	TN	480	0.00%
TOTAL					40,426 lbs.	

**Table 2. Top 50 US Power Plant Mercury Emitters
By lbs Per GWh (2007)**

Rank	Facility	Owner	County	State	lbs Hg	Net Gen (MWh)	lbs Hg/GWh
1	H.W. PIRKEY	American Electric Power	HARRISON	TX	1,080	5,171,260	0.20884659
2	SHAWVILLE	Reliant Energy	CLEARFIELD	PA	723	3,718,110	0.19445363
3	BIG BROWN	Luminant (formerly TXU)	FREESTONE	TX	1,201	9,090,236	0.13211978
4	MILTON R YOUNG	Minnkota Power Cooperative	OLIVER	ND	564	4,921,894	0.11459003
5	SANDOW	Luminant (formerly TXU)	MILAM	TX	541	4,830,430	0.11199831
6	MONTICELLO	Luminant (formerly TXU)	TITUS	TX	1,668	16,432,427	0.10150661
7	AVON LAKE	Reliant Energy	LORAIN	OH	259.4	2,741,118	0.09464386
8	GREENE COUNTY	Alabama Power Company (Southern Company)	GREENE	AL	396.5	4,241,231	0.09348701
9	ROXBORO	Progress Energy	PERSON	NC	680	7,382,730	0.09210685
10	COAL CREEK	Great River Energy	MC LEAN	ND	851.1	9,262,539	0.09188625
11	GASTON	Alabama Power Company (Southern Company)	SHELBY	AL	1,174.9	12,873,511	0.09126492
12	CONESVILLE	American Electric Power	COSHOCTON	OH	1,004	11,160,796	0.08995774
13	MARTIN LAKE	Luminant (formerly TXU)	RUSK	TX	1,687	19,460,252	0.08668952
14	CORONADO	Salt River Project	APACHE	AZ	556	6,488,089	0.08569550
15	MILLER	Alabama Power Company (Southern Company)	JEFFERSON	AL	1,957.8	22,951,466	0.08530174
16	LIMESTONE	NRG Energy	LIMESTONE	TX	1,196.5	14,410,512	0.08302967
17	ROY S NELSON	Entergy Corporation	CALCASIEU	LA	403.2	4,897,096	0.08233451
18	ANTELOPE VALLEY	Basin Electric	MERCER	ND	570	6,957,780	0.08192268
19	GORGAS	Alabama Power Company (Southern Company)	WALKER	AL	642.6	7,846,562	0.08189574
20	LABADIE	Ameren	FRANKLIN	MO	1,518	19,906,688	0.07625578
21	RUSH ISLAND	Ameren	JEFFERSON	MO	533.7	7,420,913	0.07191837
22	SPURLOCK	East Kentucky Power Cooperative	MASON	KY	450	6,285,404	0.07159444
23	MERAMEC	Ameren	SAINT LOUIS (CITY)	MO	420.1	6,309,911	0.06657780
24	HATFIELD	Allegheny Energy	GREENE	PA	724	11,031,147	0.06563234
25	KEYSTONE	Reliant Energy	ARMSTRONG	PA	846.4	13,007,877	0.06506827
26	YATES	Georgia Power (Southern Company)	COWETA	GA	516	8,098,859	0.06371268

27	COLUMBIA	Alliant Energy	COLUMBIA	WI	487	7,744,524	0.06288314
28	PLEASANT PRAIRIE	We Energies (Wisconsin Energy Corporation)	KENOSHA	WI	535.5	8,540,832	0.06269881
29	DOMINION	Kincaid Generation	CHRISTIAN	IL	430	6,956,952	0.06180868
30	GEORGE NEAL SOUTH	MidAmerican Energy	WOODBURY	IA	300	4,897,414	0.06125682
31	LOUISA	MidAmerican Energy	LOUISA	IA	240	3,920,356	0.06121893
32	SHERBURNE COUNTY	Xcel Energy	SHERBURNE	MN	1,043	17,082,578	0.06105636
33	BIG CAJUN 2	NRG Energy	POINTE COUPEE	LA	800	13,169,326	0.06074722
34	SCHERER	Georgia Power (Southern Company)	MONROE	GA	1,582.4	26,455,145	0.05981445
35	NEWTON	Ameren	JASPER	IL	520.9	8,839,558	0.05892829
36	JOHN SEVIER	Tennessee Valley Authority	HAWKINS	TN	300	5,168,777	0.05804081
37	SIOUX	Ameren	ST CHARLES	MO	404	7,050,015	0.05730484
38	GEORGE NEAL NORTH	MidAmerican Energy	WOODBURY	IA	380	6,653,037	0.05711677
39	COLSTRIP	PPL Montana LLC (PPL)	ROSEBUD	MT	890	17,222,283	0.05167724
40	J.M STUART	Duke Energy/American Electric Power	ADAMS	OH	828	16,065,476	0.05153909
41	ROCKPORT	American Electric Power	SPENCER	IN	861	16,972,673	0.05072860
42	LARAMIE	Basin Electric	PLATTE	WY	660	13,232,063	0.04987884
43	WHITE BLUFF	Entergy Corporation	JEFFERSON	AR	518	10,430,701	0.04966109
44	CARDINAL	American Electric Power	JEFFERSON	OH	552	11,210,960	0.04923753
45	AMEREN ENERGY	Ameren	PEORIA	IL	238.3	5,000,159	0.04765848
46	INDEPENDENCE	Entergy Corporation	INDEPENDENCE	AR	596	12,639,770	0.04715276
47	BECKJORD	Duke Energy	CLERMONT	OH	312.1	6,654,641	0.04689960
48	KYGER CREEK	Ohio Valley Electric Corporation	GALLIA	OH	345	7,368,606	0.04682025
49	R. M. SCHAHFER	Northern Indiana Public Service Company (NI Source)	JASPER	IN	495	10,900,751	0.04540972
50	BRANDON SHORES & WAGNER	Constellation Energy	ANNE ARUNDEL	MD	550	12,115,811	0.04539523

**Table 3. Top 50 US Power Plant Hg Emitters
By lbs Per Billion Btu (2007)**

Rank	Facility	Owner	County	State	Lbs Hg	Heat Input (mmBTU)	lbs Hg per Billion BTU
1	SHAWVILLE	Reliant Energy	CLEARFIELD	PA	723	34,869,260	0.02073460
2	H.W. PIRKEY	American Electric Power	HARRISON	TX	1,080	52,711,961	0.02048871
3	BIG BROWN	Luminant (formerly TXU)	FREESTONE	TX	1,201	91,454,733	0.01313218
4	MILTON R YOUNG	Minnkota Power Cooperative	OLIVER	ND	564	48,820,963	0.01155241
5	SANDOW	Luminant (formerly TXU)	MILAM	TX	541	49,723,489	0.01088017
6	MONTICELLO	Luminant (formerly TXU)	TITUS	TX	1,668	168,091,539	0.00992316
7	GASTON	Alabama Power Company (Southern Company)	SHELBY	AL	1,174.9	125,765,976	0.00934195
8	CONESVILLE	American Electric Power	COSHOCTON	OH	1,004	108,230,769	0.00927647
9	LIMESTONE	NRG Energy	LIMESTONE	TX	1,196.5	130,650,862	0.00915800
10	COAL CREEK	Great River Energy	MC LEAN	ND	851.1	93,154,802	0.00913641
11	AVON LAKE	Reliant Energy	LORAIN	OH	259.4	29,042,893	0.00893265
12	GREENE	Alabama Power Company (Southern Company)	GREENE	AL	396.5	45,594,963	0.00869614
13	CORONADO	Salt River Project	APACHE	AZ	556	64,432,059	0.00862924
14	GORGAS	Alabama Power Company (Southern Company)	WALKER	AL	642.6	74,672,347	0.00860560
15	MILLER	Alabama Power Company (Southern Company)	JEFFERSON	AL	1,957.8	231,076,873	0.00847251
16	MARTIN LAKE	Luminant (formerly TXU)	RUSK	TX	1,687	200,433,994	0.00841674
17	LABADIE	Ameren	FRANKLIN	MO	1,518	182,401,602	0.00832230
18	ANTELOPE VALLEY	Basin Electric	MERCER	ND	570	72,781,348	0.00783168
19	ROY S NELSON	Entergy Corporation	CALCASIEU	LA	403.2	53,147,792	0.00758639
20	RUSH ISLAND	Ameren	JEFFERSON	MO	533.7	70,659,632	0.00755311
21	HATFIELD	Allegheny Energy	GREENE	PA	724	99,156,903	0.00730156
22	KEYSTONE	Reliant Energy	ARMSTRONG	PA	846.4	115,970,886	0.00729838
23	YATES	Georgia Power (Southern Company)	COWETA	GA	516	78,727,430	0.00655426
24	SIOUX	Ameren	ST CHARLES	MO	404	62,966,027	0.00641616

25	GEORGE NEAL SOUTH	MidAmerican Energy	WOODBURY	IA	300	47,557,334	0.00630818
26	JOHN SEVIER	Tennessee Valley Authority	HAWKINS	TN	300	47,638,816	0.00629739
27	MERAMEC	Ameren	SAINT LOUIS (CITY)	MO	420.1	67,538,374	0.00622017
28	LOUISA	MidAmerican Energy	LOUISA	IA	240	38,983,923	0.00615638
29	COLUMBIA	Alliant Energy	COLUMBIA	WI	487	79,911,330	0.00609425
30	BIG CAJUN 2	NRG Energy	POINTE COUPEE	LA	800	133,886,098	0.00597523
31	SCHERER	Georgia Power (Southern Company)	MONROE	GA	1,582.4	265,410,305	0.00596209
32	J.M STUART	Duke Energy/American Electric Power	ADAMS	OH	828	139,073,870	0.00595367
33	SHERBURNE	Xcel Energy	SHERBURNE	MN	1,043	177,919,044	0.00586222
34	PLEASANT PRAIRIE	We Energies (Wisconsin Energy Corporation)	KENOSHA	WI	535.5	92,553,199	0.00578586
35	GEORGE NEAL NORTH	MidAmerican Energy	WOODBURY	IA	380	66,198,185	0.00574034
36	DOMINION	Kincaid Generation	CHRISTIAN	IL	430	74,998,715	0.00573343
37	ROCKPORT	American Electric Power	SPENCER	IN	861	150,964,619	0.00570332
38	SPURLOCK	East Kentucky Power Cooperative	MASON	KY	450	79,497,127	0.00566058
39	NEWTON	Ameren	JASPER	IL	520.9	93,025,723	0.00559953
40	CARDINAL	American Electric Power	JEFFERSON	OH	552	103,301,042	0.00534361
41	KYGER CREEK	Ohio Valley Electric Corporation	GALLIA	OH	345	66,833,666	0.00516207
42	CLIFTY CREEK	Indiana Kentucky Electric Corporation	JEFFERSON	IN	403	78,941,965	0.00510502
43	MUSKINGUM	American Electric Power	WASHINGTON	OH	400	78,465,661	0.00509777
44	BARRY	Alabama Power Company (Southern Company)	MOBILE	AL	711	139,884,999	0.00508275
45	BRANDON SHORES & WAGNER	Constellation Energy	ANNE ARUNDEL	MD	550	112,315,285	0.00489693
46	ROXBORO	Progress Energy	PERSON	NC	680	140,380,920	0.00484396
47	BECKJORD	Duke Energy	CLERMONT	OH	312.1	64,712,394	0.00482288
48	BRANCH	Georgia Power (Southern Company)	PUTNAM	GA	464.1	96,452,394	0.00481170
49	WHITE BLUFF	Entergy Corporation	JEFFERSON	AR	518	107,764,262	0.00480679
50	EME HOMER CITY	Midwest Generation (Edison International)	INDIANA	PA	628.2	132,329,347	0.00474778

Trend Information

The chart, *Power Plant Mercury Emission (2002 – 2006)*, shows the total tons reported by these facilities during this time period. The good news is that nationwide we expect to see a slight drop in overall mercury emissions, due in large part to planned sulfur dioxide “scrubber” installations.

Power Plant Mercury Emissions (2002-2006)					
	2002	2003	2004	2005	2006
Hg tons	45.2	45.3	47.3	48.3	46.7

Source: EPA's Toxics Release Inventory

Mercury Removal is Achievable

Activated carbon injection, which is commercially available and has been tested through the Department of Energy's Clean Coal Power Initiative, can achieve mercury reductions of 90 percent (and better when coupled with a fabric filter for particulate control) on both bituminous and sub-bituminous coals. In addition, mercury can be significantly reduced as a “co-benefit” of controls for other pollutants, such as fabric filters, sulfur dioxide scrubbers, and selective catalytic reduction

Even though mercury removal is achievable, EPA has backed away from strict power plant mercury regulation. In 2005, instead of requiring power plant mercury reductions, EPA opted for a weak cap-and-trade scheme which would have allowed power plants to either reduce their own mercury pollution or buy pollution credits from other plants. In February 2008, a federal appeals court ruled that EPA's approach to power plant mercury violates the Clean Air Act, and vacated (i.e., threw out in its entirety) EPA's lax regulation.

Methodology

2007 TRI data is not available yet on EPA's searchable “TRI Explorer” database.⁵ However, individual power plant TRI reports are publicly available on EPA's website⁶. Environmental Integrity Project retrieved these reports for each U.S. power plant that reported 300 pounds or more of mercury emissions in the previous year, 2006. This subset includes 108 of the largest U.S. coal-fired power plants, and accounts for roughly two-thirds of all power plant mercury emissions.⁷

Net generation and heat input data are from EPA's Acid Rain Program Emissions Tracking System (ETS). The database is a publicly accessible repository for emissions and other operating information from the utility industry, and includes more than 1,000 power plants regulated under the Acid Rain Program and the NOx SIP Call. Additional information on these

programs and ETS can be found on EPA's Clean Air Markets web page at <http://www.epa.gov/airmarkets/>. All data is self-reported by the utility industry.

Endnotes

¹ See, <http://www.epa.gov/mercury/about.htm>.

² *Third National Report on Human Exposure to Environmental Chemicals*, Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Environmental Health, Division of Laboratory Sciences, Atlanta, Georgia, NCEH Pub. No. 05-0664, July 2005; available at: http://www.cdc.gov/exposurereport/pdf/factsheet_mercury.pdf

³ Environmental Integrity Project reviewed the 2007 TRI reports for all power plants that reported at least 300 pounds of mercury emissions in the prior year (2006).

⁴ Because of the preliminary nature of the 2007 TRI data (i.e., the data is not yet fully searchable in EPA's *TRI Explorer* database), we reviewed individual reports for only a subset of all power plants – those plants that reported 300 pounds or more in the prior year, 2006. The rankings in Tables 2 and 3 will shift when the 2007 data is incorporated into EPA's searchable database, as some smaller power plants are likely emitting mercury at high rates relative to their reported heat input and/or net electric generation.

⁵ See, <http://www.epa.gov/triexplorer/>

⁶ See, <http://www.epa.gov/tri-efdr/>

⁷ Based on 2006 reported emissions.

About the Environmental Integrity Project

The Environmental Integrity Project (EIP) is a nonpartisan, nonprofit organization dedicated to more effective enforcement of environmental laws and to the prevention of political interference with those laws. EIP's research and reports shed light on how environmental laws affect public health. Questions or comments may be directed to ilevin@environmentalintegrity.org.

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