

August 2012

# Toxic Power



**How Power Plants Contaminate  
Our Air and States**

# Note

This report analyzes publicly available data from the U.S. Environmental Protection Agency's (EPA) Toxics Release Inventory (TRI). Facilities that release significant quantities toxic chemicals must report these releases, including industrial air emissions, to TRI annually. The data in this report serves as an update to a similar report NRDC released in 2011, also entitled *Toxic Power*.

Changes in this report include new mercury and air toxics emissions data, updates to pollution control status at covered power plants, and different power plant ownership. State and power plant rankings are also adjusted to reflect the updated information.

# Introduction

The electric sector is the largest industrial (stack) source of toxic air pollution in the United States. In fact, in 2010 coal- and oil-fired power plants alone accounted for nearly 44 percent of all reported toxic pollution from industrial sources. Thanks to the U.S. Environmental Protection Agency (EPA), however, toxic pollution from power plants should decline dramatically over the next several years.

The EPA recently finalized the Mercury and Air Toxics Standards (MATS) which requires significant reductions in mercury and air toxic emissions. Compared to 2010 levels, the standard will reduce mercury pollution from 34 tons to 7 tons, a 79% reduction, by 2015. Sulfur dioxide pollution will be reduced from 5,140,000 tons in 2010 to 1,900,000 tons in 2015, a 63% reduction. Another dangerous acid gas, hydrochloric acid, will be reduced from 106,000 tons in 2010 to 5,500 tons in 2015, a 95% reduction.

With those and other pollution reductions resulting from the standard, as many as 11,000 premature deaths and 130,000 asthma attacks, 5,700 hospital visits, 4,700 heart attacks, and 2,800 cases of chronic bronchitis will be avoided in 2016. The public health improvements are also estimated to save \$37 billion to \$90 billion in health costs, and prevent up to 540,000 missed work or “sick” days each year.

Despite the significant benefit to public health, power companies continue to sue to block the pollution reductions, and some in Congress have repeatedly sought to repeal, weaken, or delay the standards. However, as long as Congress and the courts allow the EPA to do its job, the threat from toxic power will decline significantly in the future.



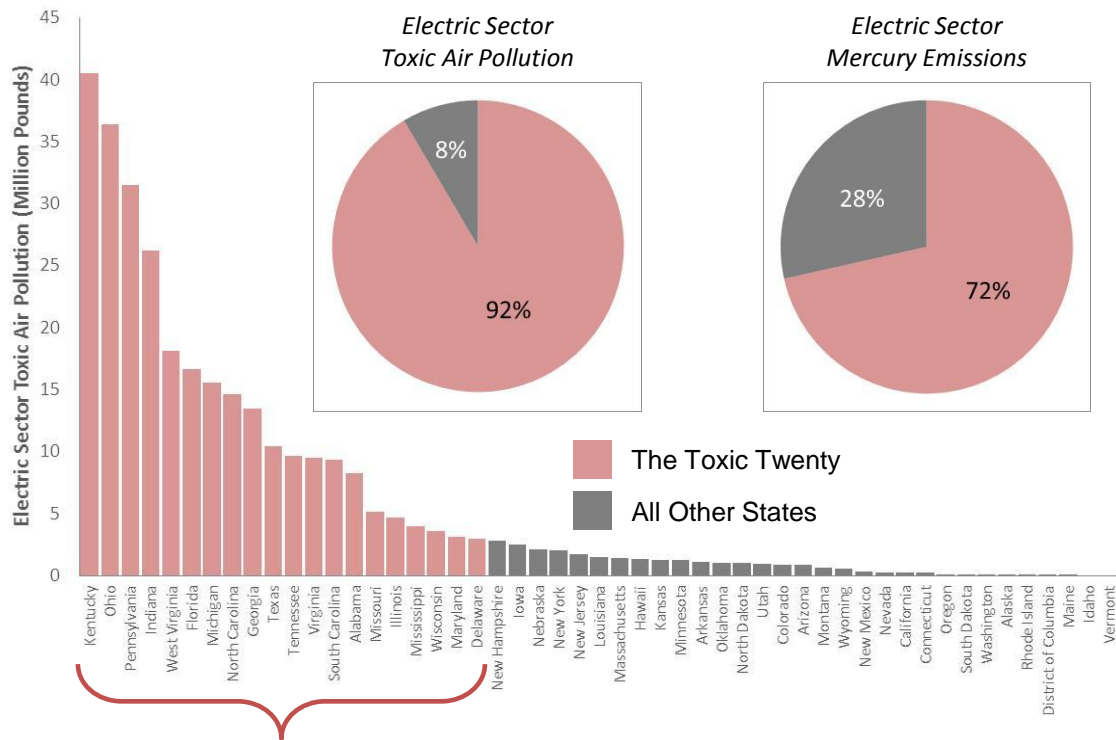
Sources: U.S. EPA Toxic Release Inventory (2010 data), accessed May 2012; U.S. EPA National Electric Energy Data System Database v.4.10 (2010); U.S. EPA. Mercury and Air Toxics Standards webpage. Accessed July 11, 2012. U.S. EPA Regulatory Impact Analysis for the Final Mercury and Air Toxics Standards, December 2011.

# The Toxic Twenty

The Toxic Twenty states are the top states responsible for a disproportionate share of toxic emissions from the U.S. electric sector. In 2010, these **Toxic Twenty** states accounted for approximately:

- ▶ **92%** of electric sector toxic air pollution
- ▶ **72%** of electric sector mercury emissions

## Contribution of the Toxic Twenty to Electric Sector Toxic Air Emissions



For comparison, in 2010, these same states accounted for just:

- ▶ **62%** of electricity generation
- ▶ **54%** of total U.S. population
- ▶ **50%** of total U.S. economic output.

Residents of the Toxic Twenty and surrounding states may be exposed to dangerous levels of toxic pollution and could face increased risk of certain health disorders.



**The Toxic Twenty**

Sources: U.S. EPA Toxic Release Inventory (2010), accessed May 2012; EIA-860 Database (2010); Census Bureau, 2010 Population Data; Bureau of Economic Analysis (2010)

# Table 1. The Toxic Twenty

State Toxic 20 Rank	State	Electric Sector Toxic Air Pollution (lb)	Total Industrial Toxic Air Pollution (lb)	Electric Sector Rank by In-State Toxic Air Pollution	Electric Sector Contribution to Toxic Air Pollution (%)	Status of State Mercury Regulations
1	Kentucky	40,564,585	51,870,725	1	78%	
2	Ohio	36,405,858	58,658,893	1	62%	
3	Pennsylvania	31,482,857	40,268,834	1	78%	
4	Indiana	26,234,197	40,370,621	1	65%	
5	West Virginia	18,101,675	22,358,811	1	81%	
6	Florida	16,662,542	29,319,543	1	57%	
7	Michigan	15,543,430	25,635,516	1	61%	●
8	North Carolina	14,634,490	30,774,704	1	48%	●
9	Georgia	13,438,115	37,276,778	1	36%	●
10	Texas	10,454,140	41,580,372	2	25%	
11	Tennessee	9,640,464	26,378,092	1	37%	
12	Virginia	9,474,271	23,625,566	1	40%	
13	South Carolina	9,343,200	26,226,868	1	36%	●
14	Alabama	8,291,061	25,842,339	2	32%	
15	Missouri	5,114,713	9,497,685	1	54%	
16	Illinois	4,665,396	23,809,122	3	20%	●
17	Mississippi	3,989,857	16,107,872	2	25%	
18	Wisconsin	3,574,179	12,509,521	2	29%	●
19	Maryland	3,126,022	5,571,429	1	56%	●
20	Delaware	2,942,946	3,400,565	1	87%	●
<b>Toxic 20 Total</b>		<b>283,683,998</b>	<b>551,083,855</b>	<b>1</b>	<b>51%</b>	
<b>U.S. Total</b>		<b>309,978,677</b>	<b>712,126,023</b>	<b>1</b>	<b>44%</b>	

● State has electric sector mercury regulations that are **at least as** stringent as EPA's proposed utility air toxics rule.

● State has electric sector mercury regulation that are **less** stringent than EPA's proposed utility air toxics rule.

Note: Numbers may not sum due to rounding. A table summarizing the emissions from all states is available in the appendix.

Sources: U.S. EPA Toxic Release Inventory (2010 data), accessed May 2012; state environmental departments.

# 2009 Comparison

Toxic air emissions from power plants may vary from year-to-year for several reasons, including fluctuations in electricity demand, changes in generation fuel mix, and the installation of pollution. Reported emissions of all air toxics in 2010 decreased by about **20 percent** (when compared with 2009 levels) and mercury decreased by about **6 percent**.

These emission reductions can primarily be attributed to the installation of new emission controls at power plants and increased generation from natural gas. As a result, in 2010:

- ▶ Total electricity generation increased by **4 percent**
- ▶ Coal-fired electricity generation increased by **5 percent**

While **18** of the Toxic Twenty from 2009 remain in the 2010 list, numerous states have made significant improvements as illustrated in the table 2.

## Correction

After publication of this year's report, it was brought to our attention that the 2009 TRI data for several states, including Kentucky, Pennsylvania, and Florida, had been revised. The most significant revision increased the toxic pollution total for Kentucky in 2009 by over 4 million pounds (15%), thereby reducing the change between the 2009 and 2010 reported emissions. This page reflects the updated 2009 data from the TRI database.

Table 2. Changes in Ranking and Emissions  
2009 to 2010

State	2010 State Rank	2009 State Rank	% Change in Electric Sector Air Pollution
Kentucky	1	3	11%
Ohio	2	1	-18%
Pennsylvania	3	2	-26%
Indiana	4	6	-2%
West Virginia	5	8	-16%
Florida	6	4	-50%
Michigan	7	7	-32%
North Carolina	8	10	-2%
Georgia	9	9	-26%
Texas	10	13	4%
Tennessee	11	15	9%
Virginia	12	14	-2%
South Carolina	13	11	-18%
Alabama	14	12	-27%
Missouri	15	16	-20%
Illinois	16	17	-16%
Mississippi	17	23	97%
Wisconsin	18	18	4%
Maryland	19	5	-88%
Delaware	20	21	21%

# Power Plant Updates

Recognizing that companies have been investing in control systems for toxic air pollutants, or plan to retire older, inefficient generating units, this report identifies the current and future investment plans that will influence toxic emissions after 2010. To the extent possible, any changes to plants that would reduce emissions or plans that have been announced since 2010 are indicated in this report. Table 3 describes the types of projects described in this report.

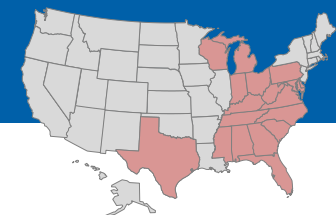
Update Type	Symbol	Criteria
Controls	●	Since 2010, the plant owner has installed or announced plans to install advanced emission controls on at least one unit at the plant.
Repower	●	Since 2010, the plant owner has repowered or announced plans to repower at least one unit at the plant.
Retire	●	Since 2010, the plant owner has retired, announced plans to retire, or has considered plans to retire at least one unit at the plant.

## Notes

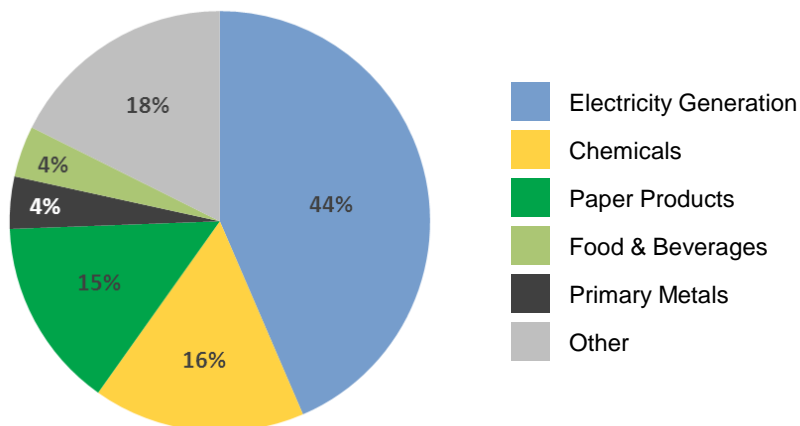
For the purpose of this report, advanced emission controls include: flue-gas desulfurization (FGD) systems, activated carbon injection (ACI) equipment, and fabric filters—often called baghouses.

A repowering project typically involves converting a coal-fired power plant to burn a cleaner fuel, usually natural gas. Sometimes plants are repowered using existing equipment, while other projects involve demolishing the existing plant and building a new facility at the same site.

# Toxic Industrial Air Pollution in the U.S.



## 2010 Toxic Air Pollution by Sector



Sector	Toxic Air Pollution (lb)	% of Total Toxic Air Pollution
Electricity Generation	309,978,677	44%
Chemicals	116,056,605	16%
Paper Products	103,943,204	15%
Primary Metals	28,544,001	4%
Food & Beverages	28,068,295	4%
Other	125,535,240	18%
<b>Total<sup>a</sup></b>	<b>712,126,023</b>	<b>100%</b>

<sup>a</sup> Numbers may not sum due to rounding.

## U.S. Electric Sector Key Facts

### Toxic Air Pollution

The U.S. electric sector was responsible for **44 percent** of all industrial toxic air pollution in 2010, emitting nearly **310 million pounds**.

### Mercury Pollution

Electricity generation in the United States accounted for **70 percent** of all industrial mercury air pollution, emitting nearly **68,200 pounds** in 2010.

## 2010 Top Power Plant Polluters

Plant Name	Owner(s)	State	Toxic Air Pollution (lb)		Controls	Repower	Retire
			All Toxics	Mercury			
Paradise	Tennessee Valley Authority	KY	7,823,176	140			
Keystone	PSEG, Constellation, Exelon & Others	PA	6,775,964	62			
Muskingum River	AEP	OH	6,540,078	321			
Homer City Station	Edison International	PA	6,538,400	547			
Big Sandy	AEP	KY	5,817,293	341			
Monroe	DTE Energy	MI	5,442,703	660			
Mill Creek	PPL	KY	5,109,772	308			
Harrison Station	Allegheny Energy	WV	4,847,426	176			
Crystal River	Progress Energy & Others	FL	4,816,690	370			
Harlee Branch	Southern	GA	4,732,772	227			
<b>U.S. Total<sup>a</sup></b>			<b>309,978,677</b>	<b>68,199</b>			

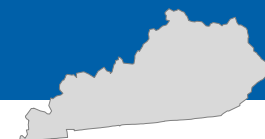
<sup>a</sup> These numbers reflect the total from all plants in the U.S. electric sector, not just the plants listed in the table.



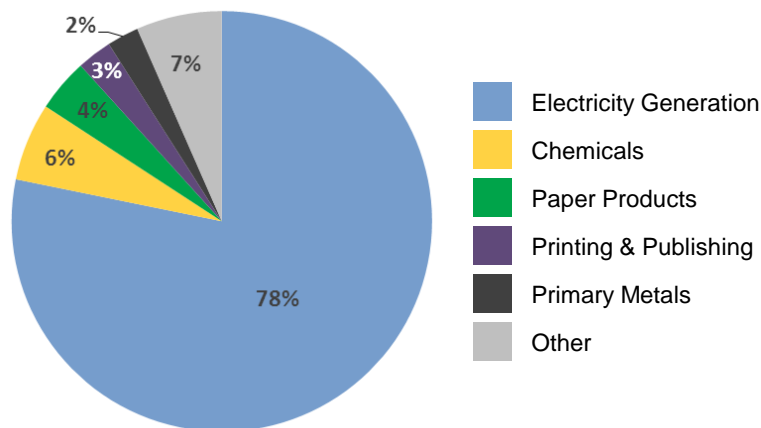
Sources: U.S. EPA Toxics Release Inventory (2010 data), accessed May 2012; U.S. EPA National Electric Energy Data System Database v.4.10 (2010).



# Toxic Industrial Air Pollution in Kentucky



## 2010 Toxic Air Pollution by Sector



Sector	Toxic Air Pollution (lb)	% of Total Toxic Air Pollution
Electricity Generation	40,564,585	78%
Chemicals	3,110,848	6%
Paper Products	2,113,142	4%
Printing & Publishing	1,396,430	3%
Primary Metals	1,267,188	2%
Other	3,418,532	7%
<b>Total<sup>a</sup></b>	<b>51,870,725</b>	<b>100%</b>

<sup>a</sup> Numbers may not sum due to rounding.

## Kentucky Key Facts

### Toxic Air Pollution

Kentucky's electric sector ranked **1st** in industrial toxic air pollution in 2010, emitting nearly **40.6 million pounds** of harmful chemicals, which accounted for **78 percent** of state pollution and about **13 percent** of toxic pollution from all U.S. power plants.

### Mercury Pollution

Kentucky ranked **9th** among all states in industrial mercury air pollution from power plants with about **2,290 pounds** emitted in 2010, which accounted for **81 percent** of state mercury air pollution and about **3 percent** of U.S. electric sector pollution.

## 2010 Top Power Plant Polluters

Plant Name	Owner(s)	Toxic Air Pollution (lb)		Controls	Repower	Retire
		All Toxics	Mercury			
Paradise	Tennessee Valley Authority	7,823,176	140			
Big Sandy	AEP	5,817,293	341			●
Mill Creek	PPL	5,109,772	308			
D B Wilson	Big Rivers Electric	4,365,223	55			
Ghent	PPL	3,271,775	332			
Cooper	East Kentucky Power Coop	1,963,420	120	●		
Robert A Reid	Big Rivers Electric	1,872,502	54			
HMP&L Station Two Henderson	Henderson City Utility Comm	1,730,692	50			
E W Brown	PPL	1,465,012	146	●		
Trimble County	PPL & Others	1,136,004	54	●		
<b>State Total<sup>a</sup></b>		<b>40,564,585</b>	<b>2,287</b>			

<sup>a</sup> These numbers reflect the total number of pounds of toxic air pollution from the state's entire electric sector, not simply those plants listed in the table.

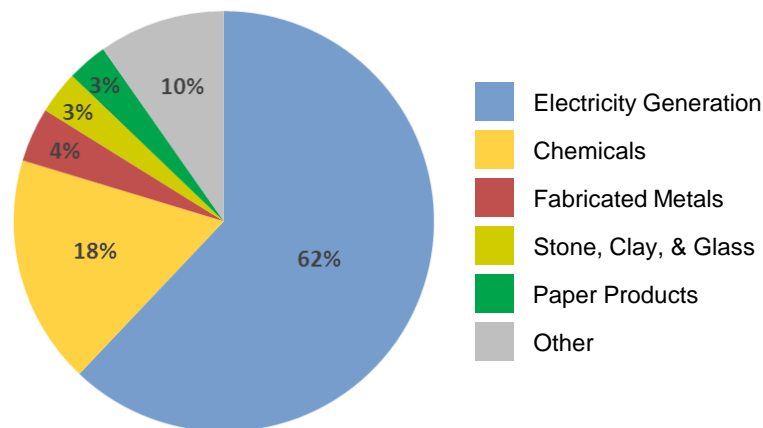


Sources: U.S. EPA Toxics Release Inventory (2010 data), accessed May 2012; U.S. EPA National Electric Energy Data System Database v.4.10 (2010).

# Toxic Industrial Air Pollution in Ohio



## 2010 Toxic Air Pollution by Sector



Sector	Toxic Air Pollution (lb)	% of Total Toxic Air Pollution
Electricity Generation	36,405,858	62%
Chemicals	10,331,217	18%
Fabricated Metals	2,453,227	4%
Stone, Clay, & Glass	1,941,015	3%
Paper Products	1,818,894	3%
Other	5,708,681	10%
<b>Total<sup>a</sup></b>	<b>58,658,893</b>	<b>100%</b>

<sup>a</sup> Numbers may not sum due to rounding.

## Ohio Key Facts

### Toxic Air Pollution

Ohio's electric sector ranked **2<sup>nd</sup>** in industrial toxic air pollution in 2010, emitting more than **36.4 million pounds** of harmful chemicals, which accounted for **62 percent** of state pollution and **12 percent** of toxic pollution from all U.S. power plants.

### Mercury Pollution

Ohio ranked **2<sup>nd</sup>** among all states in industrial mercury air pollution from power plants with nearly **4,210 pounds** emitted in 2010, which accounted for **73 percent** of state mercury air pollution and **6 percent** of U.S. electric sector pollution.

## 2010 Top Power Plant Polluters

Plant Name	Owner(s)	Toxic Air Pollution (lb)		Controls	Repower	Retire
		All Toxics	Mercury			
Muskingum River	AEP	6,540,078	321			
Cardinal	Buckeye Power & AEP	3,786,715	407			
Kyger Creek	AEP & Others	3,514,970	420			
Walter C Beckjord	Duke & Others	3,365,040	209			
Miami Fort	Duke & DPL	2,852,351	127			
W H Sammis	FirstEnergy	2,407,919	424			
Eastlake	FirstEnergy	2,378,864	301			
Avon Lake	GenOn	2,165,520	246			
W H Zimmer	Duke, DPL & AEP	2,018,517	135			
General James M Gavin	AEP	1,139,193	829			
<b>State Total<sup>a</sup></b>		<b>36,405,858</b>	<b>4,207</b>			

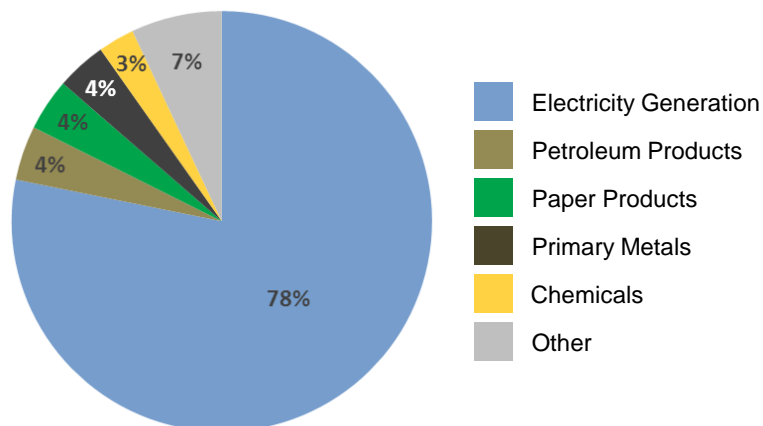
<sup>a</sup> These numbers reflect the total number of pounds of toxic air pollution from the state's entire electric sector, not simply those plants listed in the table.



# Toxic Industrial Air Pollution in Pennsylvania



## 2010 Toxic Air Pollution by Sector



Sector	Toxic Air Pollution (lb)	% of Total Toxic Air Pollution
Electricity Generation	31,482,857	78%
Petroleum Products	1,687,518	4%
Paper Products	1,613,386	4%
Primary Metals	1,545,590	4%
Chemicals	1,123,611	3%
Other	2,815,871	7%
<b>Total<sup>a</sup></b>	<b>40,268,834</b>	<b>100%</b>

<sup>a</sup> Numbers may not sum due to rounding.

## Pennsylvania Key Facts

### Toxic Air Pollution

Pennsylvania's electric sector toxic air pollution **3<sup>rd</sup>** in 2010, emitting nearly **31.5 million pounds** of harmful chemicals, which accounted for **78 percent** of state pollution and **10 percent** of toxic pollution from all U.S. power plants.

### Mercury Pollution

Pennsylvania ranked **3<sup>rd</sup>** in industrial mercury air pollution from power plants with more than **3,960 pounds** emitted in 2010, which accounted for **64 percent** of state mercury air pollution and **6 percent** of U.S. electric sector pollution.

## 2010 Top Power Plant Polluters

Plant Name	Owner(s)	Toxic Air Pollution (lb)		Controls	Repower	Retire
		All Toxics	Mercury			
Keystone	PSEG, Constellation, Exelon & Others	6,775,964	62			
Homer City Station	Edison International	6,538,400	547			
Shawville	GenOn	2,704,698	702			●
Portland	GenOn	2,236,472	132			●
Cheswick Power Plant	GenOn	1,964,283	91	●		
Armstrong	Allegheny Energy	1,890,628	313			●
Hatfield's Ferry	Allegheny Energy	1,581,160	386			
Sunbury Generation	Sunbury Generation LP	1,448,908	89	●		
PPL Montour	PPL	1,131,088	277			
Titus	GenOn	838,616	22			●
<b>State Total<sup>a</sup></b>		<b>31,482,857</b>	<b>3,963</b>			

<sup>a</sup> These numbers reflect the total number of pounds of toxic air pollution from the state's entire electric sector, not simply those plants listed in the table.

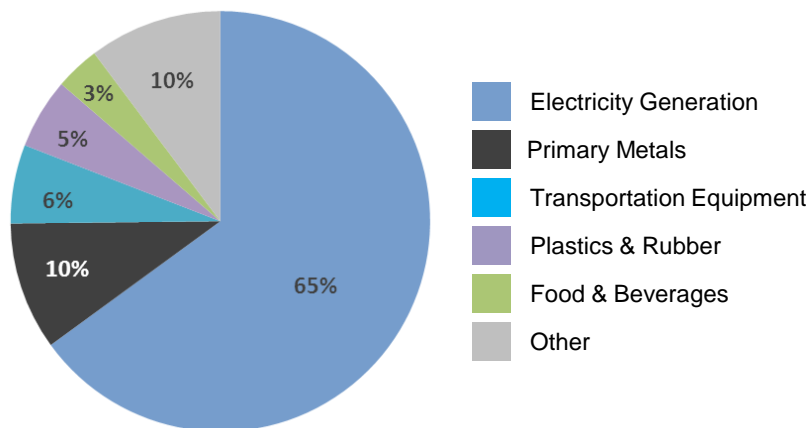


Sources: U.S. EPA Toxics Release Inventory (2010 data), accessed May 2012; U.S. EPA National Electric Energy Data System Database v.4.10 (2010).

# Toxic Industrial Air Pollution in Indiana



## 2010 Toxic Air Pollution by Sector



Sector	Toxic Air Pollution (lb)	% of Total Toxic Air Pollution
Electricity Generation	26,234,197	65%
Primary Metals	3,976,992	10%
Transportation Equipment	2,445,612	6%
Plastics & Rubber	2,189,589	5%
Food & Beverages	1,380,917	3%
Other	4,143,313	10%
<b>Total<sup>a</sup></b>	<b>40,370,621</b>	<b>100%</b>

<sup>a</sup> Numbers may not sum due to rounding.

## Indiana Key Facts

### Toxic Air Pollution

Indiana's electric sector ranked **4<sup>th</sup>** in industrial toxic air pollution in 2010, emitting more than **26.2 million pounds** of harmful chemicals, which accounted for **65 percent** of state pollution and **8 percent** of toxic pollution from all U.S. power plants.

### Mercury Pollution

Indiana ranked **5<sup>th</sup>** among all states in industrial mercury air pollution from power plants with more than **3,170 pounds** emitted in 2010, which accounted for **78 percent** of state mercury air pollution and **5 percent** of U.S. electric sector pollution.

## 2010 Top Power Plant Polluters

Plant Name	Owner(s)	Toxic Air Pollution (lb)		Controls	Repower	Retire
		All Toxics	Mercury			
AES Petersburg	AES	3,809,507	568	●		
Clifty Creek	AEP & Others	2,781,984	330	●		
State Line Energy	Dominion	2,705,651	143			●
Rockport	AEP	2,517,032	235			
Gibson	Duke & Others	2,229,889	153			
R Gallagher	Duke	2,155,414	24	●		●
R M Schahfer	NiSource	1,911,594	522	●		
Merom	Hoosier Energy	1,763,116	102	●		
Harding Street	AES	1,278,517	132			
Wabash River	Duke & Wabash Valley Power Assn	1,252,762	113			
<b>State Total<sup>a</sup></b>		<b>26,234,197</b>	<b>3,172</b>			

<sup>a</sup> These numbers reflect the total number of pounds of toxic air pollution from the state's entire electric sector, not simply those plants listed in the table.

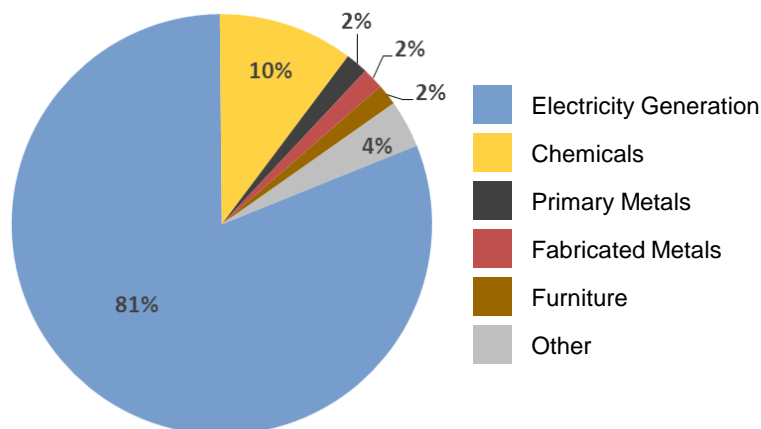


Sources: U.S. EPA Toxics Release Inventory (2010 data), accessed May 2012; U.S. EPA National Electric Energy Data System Database v.4.10 (2010).

# Toxic Industrial Air Pollution in West Virginia



## 2010 Toxic Air Pollution by Sector



Sector	Toxic Air Pollution (lb)	% of Total Toxic Air Pollution
Electricity Generation	18,101,675	81%
Chemicals	2,325,191	10%
Primary Metals	384,917	2%
Fabricated Metals	367,771	2%
Furniture	362,949	2%
Other	816,309	4%
<b>Total<sup>a</sup></b>	<b>22,358,811</b>	<b>100%</b>

<sup>a</sup> Numbers may not sum due to rounding.

## West Virginia Key Facts

### Toxic Air Pollution

West Virginia's electric sector ranked **5<sup>th</sup>** in industrial toxic air pollution in 2010, emitting more than **18.1 million pounds** of harmful chemicals, which accounted for **81 percent** of state pollution and **6 percent** of toxic pollution from all U.S. power plants.

### Mercury Pollution

West Virginia ranked **7<sup>th</sup>** among all states in industrial mercury air pollution from power plants with nearly **2,500 pounds** emitted in 2010, which accounted for **88 percent** of state mercury air pollution and **4 percent** of U.S. electric sector pollution.

## 2010 Top Power Plant Polluters

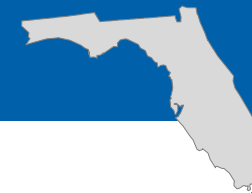
Plant Name	Owner(s)	Toxic Air Pollution (lb)		Controls	Repower	Retire
		All Toxics	Mercury			
Harrison Station	Allegheny Energy	4,847,426	176			
Pleasants Power Station	Allegheny Energy	3,160,166	108			
John E Amos	AEP	2,743,707	585	●		
Philip Sporn	AEP	2,365,699	140			●
Kammer	AEP	1,296,539	303			●
Kanawha River	AEP	997,234	52			●
Mt Storm	Dominion	514,466	332			
Fort Martin	Allegheny Energy	494,628	276			
Mitchell	AEP	408,187	96			
Mountaineer	AEP	406,106	312			
<b>State Total<sup>a</sup></b>		<b>18,101,675</b>	<b>2,495</b>			

<sup>a</sup> These numbers reflect the total number of pounds of toxic air pollution from the state's entire electric sector, not simply those plants listed in the table.

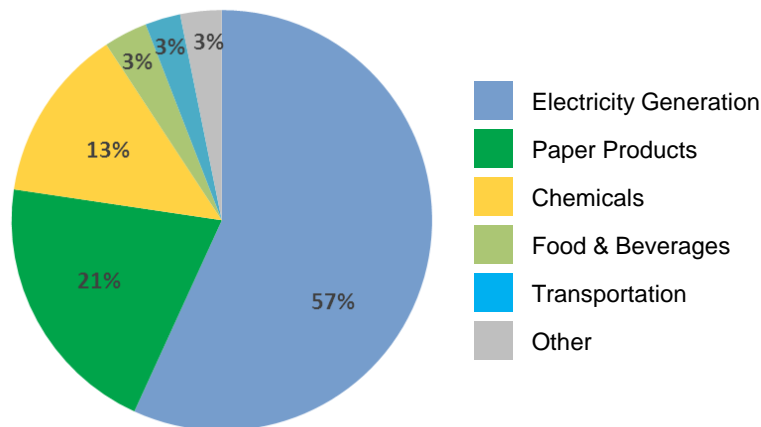


Sources: U.S. EPA Toxics Release Inventory (2010 data), accessed May 2012; U.S. EPA National Electric Energy Data System Database v.4.10 (2010).

# Toxic Industrial Air Pollution in Florida



## 2010 Toxic Air Pollution by Sector



Sector	Toxic Air Pollution (lb)	% of Total Toxic Air Pollution
Electricity Generation	16,662,542	57%
Paper Products	6,016,910	21%
Chemicals	3,926,050	13%
Food & Beverages	981,943	3%
Transportation Equipment	798,205	3%
Other	933,892	3%
<b>Total<sup>a</sup></b>	<b>29,319,543</b>	<b>100%</b>

<sup>a</sup> Numbers may not sum due to rounding.

## Florida Key Facts

### Toxic Air Pollution

Florida's electric sector ranked **6<sup>th</sup>** in industrial toxic air pollution in 2010, emitting nearly **16.7 million pounds** of harmful chemicals, which accounted for **57 percent** of state pollution and **5 percent** of toxic pollution from all U.S. power plants.

### Mercury Pollution

Florida ranked **15<sup>th</sup>** among all states in industrial mercury air pollution from power plants with about **1,710 pounds** emitted in 2010, which accounted for **75 percent** of state mercury air pollution and **3 percent** of U.S. electric sector pollution.

## 2010 Top Power Plant Polluters

Plant Name	Owner(s)	Toxic Air Pollution (lb)		Controls	Repower	Retire
		All Toxics	Mercury			
Crystal River	Progress Energy & Others	4,816,690	370	●		●
Seminole	Seminole Electric Coop	2,125,986	95			
St Johns River	JEA & NextEra Energy	1,944,511	69			
C D McIntosh Jr	City of Lakeland & Others	1,431,032	10			
Cedar Bay	Cogentrix	947,594	3			
Crist	Southern	946,181	63			
Northside	JEA	847,327	30			
Stanton	Orlando Utilities, FL Municipal Power & Others	644,094	187			
West County	NextEra Energy	473,484	131			
Deerhaven	Gainesville Regional Utilities	399,221	2			
<b>State Total<sup>a</sup></b>		<b>16,662,542</b>	<b>1,709</b>			

<sup>a</sup> These numbers reflect the total number of pounds of toxic air pollution from the state's entire electric sector, not simply those plants listed in the table.

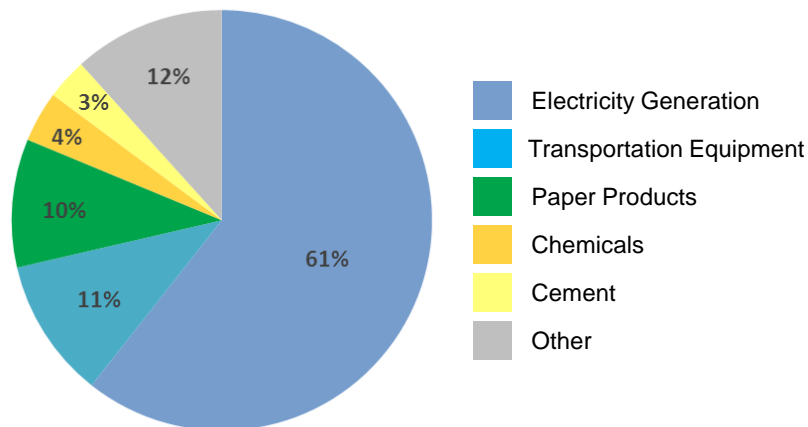


Sources: U.S. EPA Toxics Release Inventory (2010 data), accessed May 2012; U.S. EPA National Electric Energy Data System Database v.4.10 (2010).

# Toxic Industrial Air Pollution in Michigan



## 2010 Toxic Air Pollution by Sector



Sector	Toxic Air Pollution (lb)	% of Total Toxic Air Pollution
Electricity Generation	15,543,430	61%
Transportation Equipment	2,755,630	11%
Paper Products	2,531,882	10%
Chemicals	1,003,555	4%
Cement	806,449	3%
Other	2,994,569	12%
<b>Total<sup>a</sup></b>	<b>25,635,516</b>	<b>100%</b>

<sup>a</sup> Numbers may not sum due to rounding.

## Michigan Key Facts

### Toxic Air Pollution

Michigan's electric sector ranked **7th** in industrial toxic air pollution in 2010, emitting more than **15.5 million pounds** of harmful chemicals, which accounted for **61 percent** of state pollution and **5 percent** of toxic pollution from all U.S. power plants.

### Mercury Pollution

Michigan ranked **10th** among all states in industrial mercury air pollution from power plants with about **2,250 pounds** emitted in 2010, which accounted for **82 percent** of state mercury air pollution and **3 percent** of U.S. electric sector pollution.

## 2010 Top Power Plant Polluters

Plant Name	Owner(s)	Toxic Air Pollution (lb)		Controls	Repower	Retire
		All Toxics	Mercury			
Monroe	DTE Energy	5,442,703	660	●		
Trenton Channel	DTE Energy	2,119,754	172			
Eckert Station	Lansing Board of Water and Light	1,790,860	123			
St Clair	DTE Energy	1,513,896	236			
J H Campbell	CMS Energy & Others	801,639	165			
River Rouge	DTE Energy	714,900	143			
Erickson Station	Lansing Board of Water and Light	639,160	44			
Presque Isle	Wisconsin Energy	384,810	25			●
Dan E Karn	CMS Energy	289,470	90			
Belle River	DTE Energy & Others	256,151	335			
<b>State Total<sup>a</sup></b>		<b>15,543,430</b>	<b>2,253</b>			

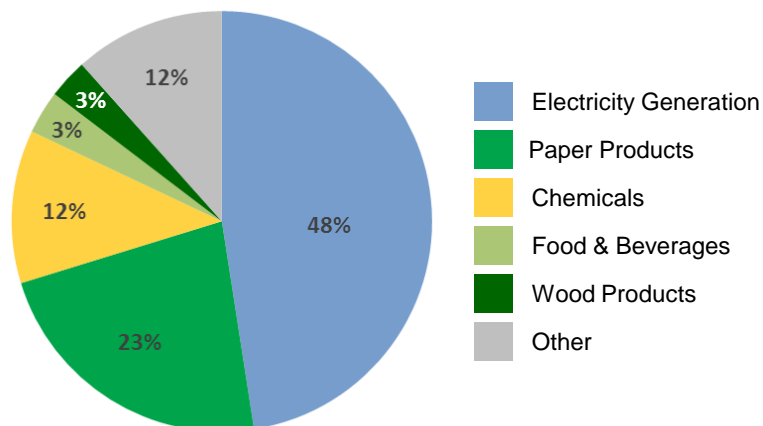
<sup>a</sup> These numbers reflect the total number of pounds of toxic air pollution from the state's entire electric sector, not simply those plants listed in the table.



# Toxic Industrial Air Pollution in North Carolina



## 2010 Toxic Air Pollution by Sector



Sector	Toxic Air Pollution (lb)	% of Total Toxic Air Pollution
Electricity Generation	14,634,490	48%
Paper Products	6,983,558	23%
Chemicals	3,625,657	12%
Food & Beverages	1,022,688	3%
Wood Products	936,581	3%
Other	3,571,729	12%
<b>Total<sup>a</sup></b>	<b>30,774,704</b>	<b>100%</b>

<sup>a</sup> Numbers may not sum due to rounding.

## North Carolina Key Facts

### Toxic Air Pollution

North Carolina's electric sector ranked **8<sup>th</sup>** in industrial toxic air pollution in 2010, emitting more than **14.6 million pounds** of harmful chemicals, which accounted for **48 percent** of state pollution and **5 percent** of toxic pollution from all U.S. power plants.

### Mercury Pollution

North Carolina ranked **24<sup>th</sup>** among all states in industrial mercury air pollution from power plants with about **960 pounds** emitted in 2010, which accounted for **47 percent** of state mercury air pollution and **1 percent** of U.S. electric sector pollution.

## 2010 Top Power Plant Polluters

Plant Name	Owner(s)	Toxic Air Pollution (lb)		Controls	Repower	Retire
		All Toxics	Mercury			
L V Sutton	Progress Energy	2,334,103	120			●
Lee	Progress Energy	2,092,112	110			●
Cliffside	Duke	1,920,663	91	●		
Cape Fear	Progress Energy	1,550,432	79			●
Riverbend	Duke	1,373,927	88			●
Buck	Duke	1,259,609	81		●	
Belews Creek	Duke	800,562	19			
W H Weatherspoon	Progress Energy	714,644	34			●
Dan River	Duke	701,561	37		●	
Marshall	Duke	644,150	49			
<b>State Total<sup>a</sup></b>		<b>14,634,490</b>	<b>957</b>			

<sup>a</sup> These numbers reflect the total number of pounds of toxic air pollution from the state's entire electric sector, not simply those plants listed in the table.



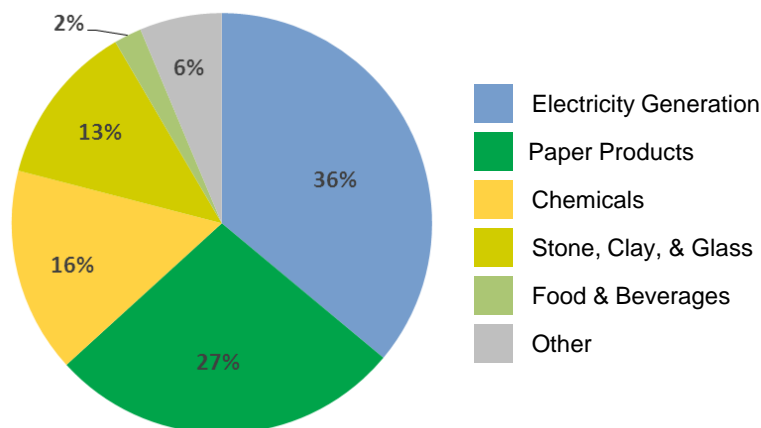
Sources: U.S. EPA Toxics Release Inventory (2010 data), accessed May 2012; U.S. EPA National Electric Energy Data System Database v.4.10 (2010).



# Toxic Industrial Air Pollution in Georgia



## 2010 Toxic Air Pollution by Sector



Sector	Toxic Air Pollution (lb)	% of Total Toxic Air Pollution
Electricity Generation	13,438,115	36%
Paper Products	10,135,286	27%
Chemicals	5,884,750	16%
Stone, Clay, & Glass	4,666,714	13%
Food & Beverages	792,091	2%
Other	2,359,822	6%
<b>Total<sup>a</sup></b>	<b>37,276,778</b>	<b>100%</b>

<sup>a</sup> Numbers may not sum due to rounding.

## Georgia Key Facts

### Toxic Air Pollution

Georgia's electric sector ranked **9<sup>th</sup>** in industrial toxic air pollution in 2010, emitting more than **13.4 million pounds** of harmful chemicals, which accounted for **36 percent** of state pollution and **4 percent** of toxic pollution from all U.S. power plants.

### Mercury Pollution

Georgia ranked **22<sup>nd</sup>** among all states in industrial air pollution from power plants with more than **1,150 pounds** emitted in 2010, which accounted for **75 percent** of state mercury air pollution and **2 percent** of U.S. electric sector pollution.

## 2010 Top Power Plant Polluters

Plant Name	Owner(s)	Toxic Air Pollution (lb)		Controls	Repower	Retire
		All Toxics	Mercury			
Harlee Branch	Southern	4,732,772	227			●
Yates	Southern	3,962,244	222			
Bowen	Southern	1,371,637	209	●		
Wansley	Southern, Oglethorpe & Others	968,670	68			
Scherer	Oglethorpe, Southern & Others	849,066	237	●		
Jack McDonough	Southern	534,157	69		●	
McIntosh	Southern	412,108	16			
Hammond	Southern	398,660	61			
Kraft	Southern	207,500	48			
Mid-Georgia Cogeneration Facility	Perennial Power	1,300	0			
<b>State Total<sup>a</sup></b>		<b>13,438,115</b>	<b>1,154</b>			

<sup>a</sup> These numbers reflect the total number of pounds of toxic air pollution from the state's entire electric sector, not simply those plants listed in the table.

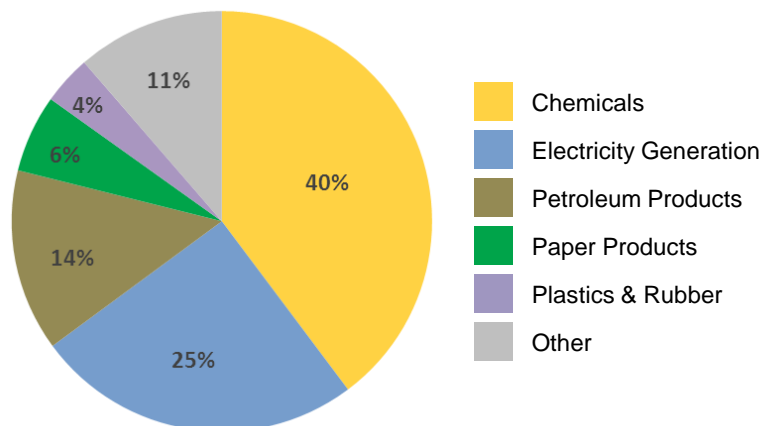


Sources: U.S. EPA Toxics Release Inventory (2010 data), accessed May 2012; U.S. EPA National Electric Energy Data System Database v.4.10 (2010).

# Toxic Industrial Air Pollution in Texas



## 2010 Toxic Air Pollution by Sector



Sector	Toxic Air Pollution (lb)	% of Total Toxic Air Pollution
Chemicals	16,531,890	40%
Electricity Generation	10,454,140	25%
Petroleum Products	5,820,829	14%
Paper Products	2,481,920	6%
Plastics & Rubber	1,566,150	4%
Other	4,725,441	11%
<b>Total<sup>a</sup></b>	<b>41,580,372</b>	<b>100%</b>

<sup>a</sup> Numbers may not sum due to rounding.

## Texas Key Facts

### Toxic Air Pollution

Texas's electric sector ranked **10<sup>th</sup>** in industrial toxic air pollution in 2010, emitting nearly **10.5 million pounds** of harmful chemicals, which accounted for **25 percent** of state pollution and about **3 percent** of toxic pollution from all U.S. power plants.

### Mercury Pollution

Texas ranked **1<sup>st</sup>** among all states in industrial mercury air pollution from power plants with nearly **12,740 pounds** emitted in 2010, which accounted for **78 percent** of state mercury air pollution and **19 percent** of U.S. electric sector mercury pollution.

## 2010 Top Power Plant Polluters

Plant Name	Owner(s)	Toxic Air Pollution (lb)		Controls	Repower	Retire
		All Toxics	Mercury			
Big Brown	Energy Future Holdings	4,071,948	3,220	●		
Monticello	Energy Future Holdings	1,246,958	1,005	●		●
Martin Lake	Energy Future Holdings	869,210	1,420	●		
W A Parish	NRG	668,742	820	●		
J T Deely	San Antonio City	362,044	509			●
Tolk	Xcel	343,242	302			
Limestone	NRG	340,106	1,150			
San Miguel	San Miguel Electric Coop, Inc	312,088	456			
Fayette Power Project	Lower CO River Authority & Austin Energy	304,791	360	●		
Welsh	AEP	285,571	470	●		●
<b>State Total<sup>a</sup></b>		<b>10,454,140</b>	<b>12,737</b>			

<sup>a</sup> These numbers reflect the total number of pounds of toxic air pollution from the state's entire electric sector, not simply those plants listed in the table.

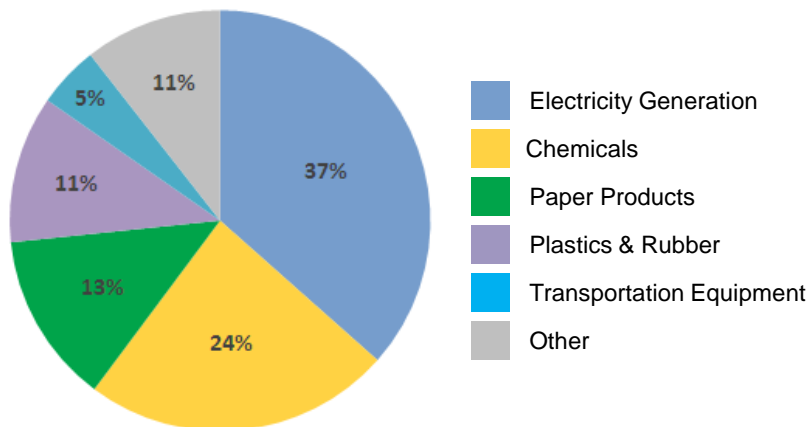


Sources: U.S. EPA Toxics Release Inventory (2010 data), accessed May 2012; U.S. EPA National Electric Energy Data System Database v.4.10 (2010).

# Toxic Industrial Air Pollution in Tennessee



## 2010 Toxic Air Pollution by Sector



Sector	Toxic Air Pollution (lb)	% of Total Toxic Air Pollution
Electricity Generation	9,640,464	37%
Chemicals	6,239,393	24%
Paper Products	3,467,456	13%
Plastics & Rubber	2,990,727	11%
Transportation Equipment	1,252,252	5%
Other	2,787,799	11%
<b>Total<sup>a</sup></b>	<b>26,378,092</b>	<b>100%</b>

<sup>a</sup> Numbers may not sum due to rounding.

## Tennessee Key Facts

### Toxic Air Pollution

Tennessee's electric sector ranked **11<sup>th</sup>** in industrial toxic air pollution in 2010, emitting more than **9.6 million pounds** of harmful chemicals, which accounted for **37 percent** of state pollution and **3 percent** of toxic pollution from all U.S. power plants.

### Mercury Pollution

Tennessee ranked **21<sup>st</sup>** among all states in industrial mercury air pollution from power plants with about **1,250 pounds** emitted in 2010, which accounted for **65 percent** of state mercury air pollution and **2 percent** of U.S. electric sector pollution.

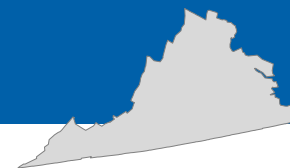
## 2010 Top Power Plant Polluters

Plant Name	Owner(s)	Toxic Air Pollution (lb)		Controls	Repower	Retire
		All Toxics	Mercury			
Cumberland	Tennessee Valley Authority	3,262,059	120			
Johnsonville	Tennessee Valley Authority	3,230,218	260			
Allen Steam Plant	Tennessee Valley Authority	1,134,358	190			
Kingston	Tennessee Valley Authority	952,608	110			
John Sevier	Tennessee Valley Authority	622,355	250			
Gallatin	Tennessee Valley Authority	280,714	280			
Bull Run	Tennessee Valley Authority	143,151	39			
Lagoon Creek	Tennessee Valley Authority	15,000	0			
<b>State Total<sup>a</sup></b>		<b>9,640,464</b>	<b>1,249</b>			

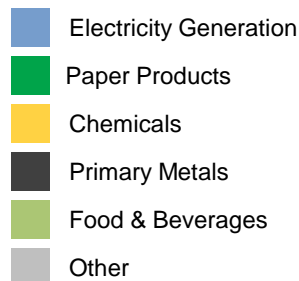
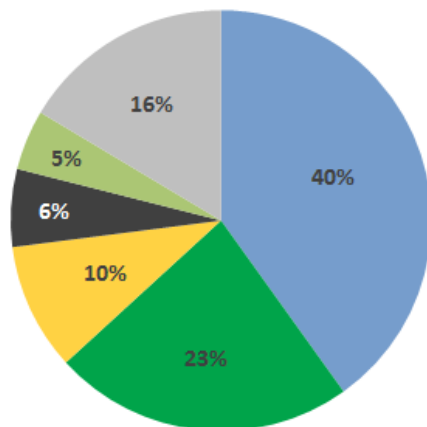
<sup>a</sup> These numbers reflect the total number of pounds of toxic air pollution from the state's entire electric sector, not simply those plants listed in the table.



# Toxic Industrial Air Pollution in Virginia



## 2010 Toxic Air Pollution by Sector



Sector	Toxic Air Pollution (lb)	% of Total Toxic Air Pollution
Electricity Generation	9,474,271	40%
Paper Products	5,457,710	23%
Chemicals	2,309,724	10%
Primary Metals	1,411,750	6%
Food & Beverages	1,094,152	5%
Other	3,877,959	16%
<b>Total<sup>a</sup></b>	<b>23,625,566</b>	<b>100%</b>

<sup>a</sup> Numbers may not sum due to rounding.

## Virginia Key Facts

### Toxic Air Pollution

Virginia's electric sector ranked **12th** in industrial toxic air pollution in 2010, emitting nearly **9.5 million pounds** of harmful chemicals, which accounted for **40 percent** of state pollution and **3 percent** of toxic pollution from all U.S. power plants.

### Mercury Pollution

Virginia ranked **27th** among all states in industrial mercury air pollution from power plants with about **660 pounds** emitted in 2010, which accounted for **66 percent** of state mercury air pollution and **1 percent** of U.S. electric sector pollution.

## 2010 Top Power Plant Polluters

Plant Name	Owner(s)	Toxic Air Pollution (lb)		Controls	Repower	Retire
		All Toxics	Mercury			
Chesterfield	Dominion	2,449,920	160	●		
Chesapeake	Dominion	2,153,755	140			●
Clinch River	AEP	1,253,768	61	●	●	
Yorktown	Dominion	993,877	80	●		●
Bremo Bluff	Dominion	630,251	107	●		
Clover	Dominion & Old Dominion Electric Coop	470,904	2			
Hopewell Cogeneration	SUEZ Energy	269,921	0			
James River Cogeneration	Cogentrix	263,046	12			
DEGS of Narrows	Duke	217,041	32			
Doswell Energy Center	NextEra Energy	185,163	0			
<b>State Total<sup>a</sup></b>		<b>9,474,271</b>	<b>659</b>			

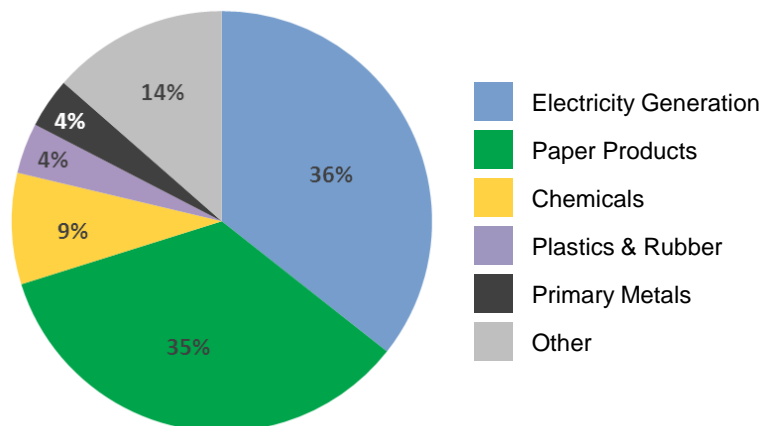
<sup>a</sup> These numbers reflect the total number of pounds of toxic air pollution from the state's entire electric sector, not simply those plants listed in the table.



# Toxic Industrial Air Pollution in South Carolina



## 2010 Toxic Air Pollution by Sector



Sector	Toxic Air Pollution (lb)	% of Total Toxic Air Pollution
Electricity Generation	9,343,200	36%
Paper Products	9,056,797	35%
Chemicals	2,244,175	9%
Plastics & Rubber	1,018,144	4%
Primary Metals	1,010,829	4%
Other	3,553,724	14%
<b>Total<sup>a</sup></b>	<b>26,226,868</b>	<b>100%</b>

<sup>a</sup> Numbers may not sum due to rounding.

## South Carolina Key Facts

### Toxic Air Pollution

South Carolina's electric sector ranked **13th** in industrial toxic air pollution in 2010, emitting more than **9.3 million pounds** of harmful chemicals, which accounted for **36 percent** of state pollution and **3 percent** of toxic pollution from all U.S. power plants.

### Mercury Pollution

South Carolina ranked **29th** among all states in industrial mercury air pollution from power plants with nearly **570 pounds** emitted in 2010, which accounted for **32 percent** of state mercury air pollution and **1 percent** of U.S. electric sector pollution.

## 2010 Top Power Plant Polluters

Plant Name	Owner(s)	Toxic Air Pollution (lb)		Controls	Repower	Retire
		All Toxics	Mercury			
Wateree	SCANA	1,578,119	33			
Canadys Steam	SCANA	1,214,128	46			
W S Lee	Duke	1,171,523	72			
McMeekin	SCANA	1,079,851	19			
Cross	Santee Cooper	958,182	76			
H B Robinson	Progress Energy	898,859	54			
Winyah	Santee Cooper	789,790	65			
Jefferies	Santee Cooper	620,318	39			
Dolphus M Grainger	Santee Cooper	382,273	17			
Urquhart	SCANA	348,114	23			
<b>State Total<sup>a</sup></b>		<b>9,343,200</b>	<b>565</b>			

<sup>a</sup> These numbers reflect the total number of pounds of toxic air pollution from the state's entire electric sector, not simply those plants listed in the table.

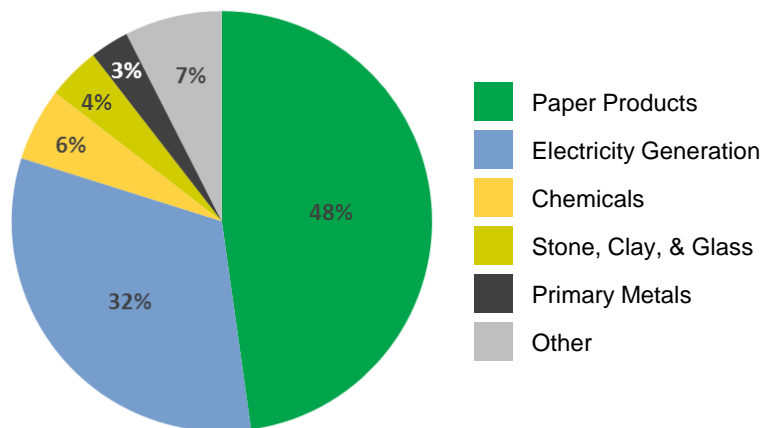


Sources: U.S. EPA Toxics Release Inventory (2010 data), accessed May 2012; U.S. EPA National Electric Energy Data System Database v.4.10 (2010).

# Toxic Industrial Air Pollution in Alabama



## 2010 Toxic Air Pollution by Sector



Sector	Toxic Air Pollution (lb)	% of Total Toxic Air Pollution
Paper Products	12,347,236	48%
Electricity Generation	8,291,061	32%
Chemicals	1,447,239	6%
Stone, Clay, & Glass	1,045,299	4%
Primary Metals	776,270	3%
Other	1,935,233	7%
<b>Total<sup>a</sup></b>	<b>25,842,339</b>	<b>100%</b>

<sup>a</sup> Numbers may not sum due to rounding.

## Alabama Key Facts

### Toxic Air Pollution

Alabama's electric sector ranked **14th** in industrial toxic air pollution in 2010, emitting nearly **8.3 million pounds** of harmful chemicals, which accounted for **32 percent** of state pollution and **3 percent** of toxic pollution from all U.S. power plants.

### Mercury Pollution

Alabama ranked **6th** among all states in industrial mercury air pollution from power plants with about **3,000 pounds** emitted in 2010, which accounted for **64 percent** of state mercury air pollution and about **4 percent** of U.S. electric sector pollution.

## 2010 Top Power Plant Polluters

Plant Name	Owner(s)	Toxic Air Pollution (lb)		Controls	Repower	Retire
		All Toxics	Mercury			
E C Gaston	Southern	1,657,614	545	●		
Widows Creek	Tennessee Valley Authority	1,466,314	77			●
Greene County	Southern	1,033,495	486			
Charles R Lowman	PowerSouth Energy Coop	963,297	39			
Colbert	Tennessee Valley Authority	835,537	180			
Barry	Southern	776,528	196	●		
Gorgas	Southern	748,130	345			
James H Miller Jr	Southern & Others	524,444	1,037	●		
Mobile Energy Services	DTE Energy	197,357	22			
Gadsden	Southern	88,345	76			
<b>State Total<sup>a</sup></b>		<b>8,291,061</b>	<b>3,002</b>			

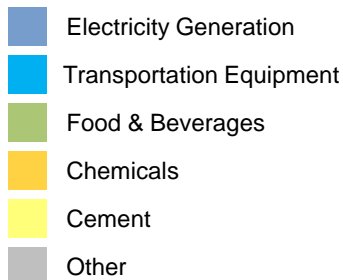
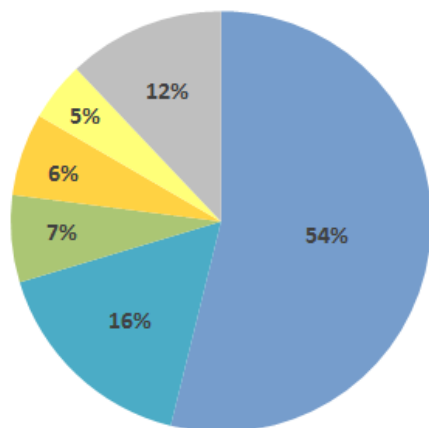
<sup>a</sup> These numbers reflect the total number of pounds of toxic air pollution from the state's entire electric sector, not simply those plants listed in the table.



# Toxic Industrial Air Pollution in Missouri



## 2010 Toxic Air Pollution by Sector



Sector	Toxic Air Pollution (lb)	% of Total Toxic Air Pollution
Electricity Generation	5,114,713	54%
Transportation Equipment	1,564,894	16%
Food & Beverages	636,230	7%
Chemicals	603,478	6%
Cement	431,811	5%
Other	1,146,559	12%
<b>Total<sup>a</sup></b>	<b>9,497,685</b>	<b>100%</b>

<sup>a</sup> Numbers may not sum due to rounding.

## Missouri Key Facts

### Toxic Air Pollution

Missouri's electric sector ranked **15th** in industrial toxic air pollution in 2010, emitting more than **5.1 million pounds** of harmful chemicals, which accounted for **54 percent** of state pollution and **2 percent** of toxic pollution from all U.S. power plants.

### Mercury Pollution

Missouri ranked **4th** among all states in industrial mercury air pollution from power plants with about **3,830 pounds** emitted in 2010, which accounted for **85 percent** of state mercury air pollution and **6 percent** of U.S. electric sector pollution.

## 2010 Top Power Plant Polluters

Plant Name	Owner(s)	Toxic Air Pollution (lb)		Controls	Repower	Retire
		All Toxics	Mercury			
Sioux	Ameren	1,703,295	324	●		
Labadie	Ameren	567,049	1,527			
Columbia	City of Columbia	482,369	0			
Asbury	Empire District Electric Co	439,649	30	●		
Thomas Hill	Associated Electric Coop	356,368	277			
New Madrid	Associated Electric Coop	304,010	160			
Sibley	Great Plains Energy	238,383	38	●		
Montrose	Great Plains Energy	216,378	138	●		
Rush Island	Ameren	189,248	448			
Meramec	Ameren	180,253	399			●
<b>State Total<sup>a</sup></b>		<b>5,114,713</b>	<b>3,833</b>			

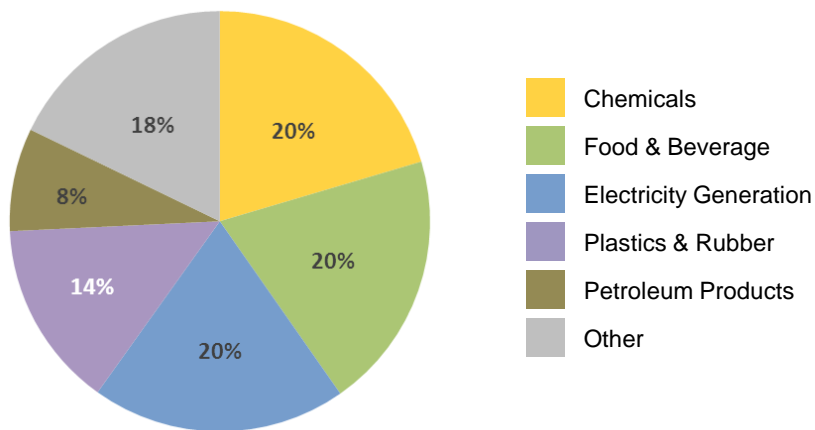
<sup>a</sup> These numbers reflect the total number of pounds of toxic air pollution from the state's entire electric sector, not simply those plants listed in the table.



# Toxic Industrial Air Pollution in Illinois



## 2010 Toxic Air Pollution by Sector



Sector	Toxic Air Pollution (lb)	% of Total Toxic Air Pollution
Chemicals	4,861,107	20%
Food & Beverages	4,730,670	20%
Electricity Generation	4,665,396	20%
Plastics & Rubber	3,421,050	14%
Petroleum Products	1,887,191	8%
Other	4,243,709	18%
<b>Total<sup>a</sup></b>	<b>23,809,122</b>	<b>100%</b>

<sup>a</sup> Numbers may not sum due to rounding.

## Illinois Key Facts

### Toxic Air Pollution

Illinois's electric sector ranked **16th** in industrial toxic air pollution in 2010, emitting nearly **4.7 million pounds** of harmful chemicals, which accounted for **20 percent** of state pollution and **2 percent** of toxic pollution from all U.S. power plants.

### Mercury Pollution

Illinois ranked **12th** among all states in industrial mercury air pollution from power plants with about **1,980 pounds** emitted in 2010, which accounted for **69 percent** of state mercury air pollution and **3 percent** of U.S. electric sector pollution.

## 2010 Top Power Plant Polluters

Plant Name	Owner(s)	Toxic Air Pollution (lb)		Controls	Repower	Retire
		All Toxics	Mercury			
Baldwin Energy Complex	Dynegy	721,505	175	●		
Tuscola Station	SUEZ Energy & Duke	446,020	17			
Powerton	Edison International	424,029	112			
Kincaid Generation LLC	Dominion	346,128	38			
Newton	Ameren	288,353	435	●		
Joliet 29	Edison International	285,213	71			
Joppa Steam	Ameren & PPL	281,382	135	●		
Will County	Edison International	267,102	152			●
Dallman	City of Springfield	266,114	23			
Waukegan	Edison International	185,820	105			
<b>State Total<sup>a</sup></b>		<b>4,665,396</b>	<b>1,984</b>			

<sup>a</sup> These numbers reflect the total number of pounds of toxic air pollution from the state's entire electric sector, not simply those plants listed in the table.



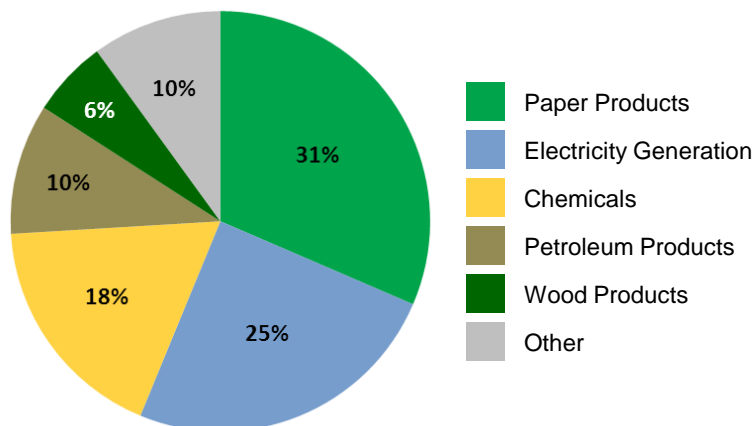
Sources: U.S. EPA Toxics Release Inventory (2010 data), accessed May 2012; U.S. EPA National Electric Energy Data System Database v.4.10 (2010).



# Toxic Industrial Air Pollution in Mississippi



## 2010 Toxic Air Pollution by Sector



Sector	Toxic Air Pollution (lb)	% of Total Toxic Air Pollution
Paper Products	5,067,235	31%
Electricity Generation	3,989,857	25%
Chemicals	2,870,504	18%
Petroleum Products	1,617,898	10%
Wood Products	951,093	6%
Other	1,611,284	10%
<b>Total<sup>a</sup></b>	<b>16,107,872</b>	<b>100%</b>

<sup>a</sup> Numbers may not sum due to rounding.

## Mississippi Key Facts

### Toxic Air Pollution

Mississippi's electric sector ranked **17th** in industrial toxic air pollution in 2010, emitting nearly **4 million pounds** of harmful chemicals, which accounted for **25 percent** of state pollution and **1 percent** of toxic pollution from all U.S. power plants.

### Mercury Pollution

Mississippi ranked **25th** among all states in industrial mercury air pollution from power plants with about **950 pounds** emitted in 2010, which accounted for **84 percent** of state mercury air pollution and **1 percent** of U.S. electric sector pollution.

## 2010 Top Power Plant Polluters

Plant Name	Owner(s)	Toxic Air Pollution (lb)		Controls	Repower	Retire
		All Toxics	Mercury			
Jack Watson	Southern	2,726,196	116			
R D Morrow	South Mississippi El Pwr Assn	668,586	184			
Victor J Daniel Jr	Southern	447,160	242	●		
Red Hills Generating Facility	S E Choctaw LLC	83,915	410			
Southaven Combined Cycle	Tennessee Valley Authority	32,000	0			
Caledonia	General Electric	32,000	0			
<b>State Total<sup>a</sup></b>		<b>3,989,857</b>	<b>951</b>			

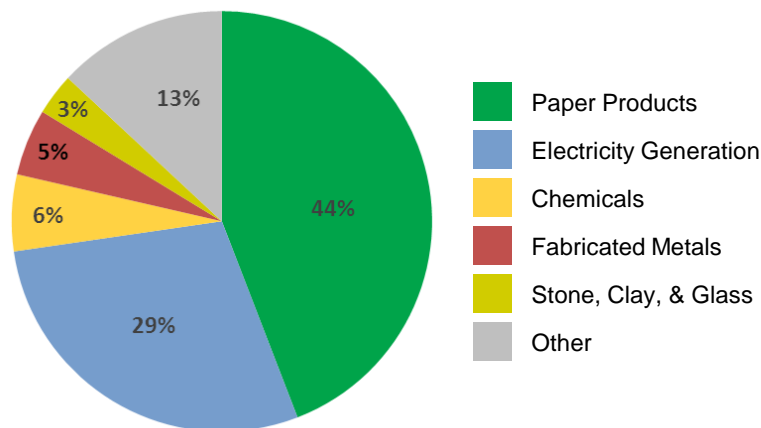
<sup>a</sup> These numbers reflect the total number of pounds of toxic air pollution from the state's entire electric sector, not simply those plants listed in the table.



# Toxic Industrial Air Pollution in Wisconsin



## 2010 Toxic Air Pollution by Sector



Sector	Toxic Air Pollution (lb)	% of Total Toxic Air Pollution
Paper Products	5,521,044	44%
Electricity Generation	3,574,179	29%
Chemicals	736,514	6%
Fabricated Metals	641,265	5%
Stone, Clay, & Glass	401,486	3%
Other	1,635,033	13%
<b>Total<sup>a</sup></b>	<b>12,509,521</b>	<b>100%</b>

<sup>a</sup> Numbers may not sum due to rounding.

## Wisconsin Key Facts

### Toxic Air Pollution

Wisconsin's electric sector ranked **18th** in industrial toxic air pollution in 2010, emitting nearly **3.6 million pounds** of harmful chemicals, which accounted for **29 percent** of state pollution and about **1 percent** of toxic pollution from all U.S. power plants.

### Mercury Pollution

Wisconsin ranked **20th** among all states in industrial mercury air pollution from power plants with nearly **1,330 pounds** emitted in 2010, which accounted for **86 percent** of state mercury air pollution and **2 percent** of U.S. electric sector pollution.

## 2010 Top Power Plant Polluters

Plant Name	Owner(s)	Toxic Air Pollution (lb)		Controls	Repower	Retire
		All Toxics	Mercury			
Nelson Dewey	Alliant Energy	662,851	46			
John P Madgett	Dairyland Power Coop	527,889	16			
Alma	Dairyland Power Coop	405,662	12			
Columbia	Alliant Energy, Integrys & MGE Energy	397,056	472			
Valley	Wisconsin Energy	359,114	1		●	
Pleasant Prairie	Wisconsin Energy	288,248	97			
Genoa	Dairyland Power Coop	232,783	66	●		
South Oak Creek	Wisconsin Energy	219,068	231	●		
Weston	Integrys & Others	147,686	160			
Edgewater	Alliant Energy & Others	106,344	50			
<b>State Total<sup>a</sup></b>		<b>3,574,179</b>	<b>1,328</b>			

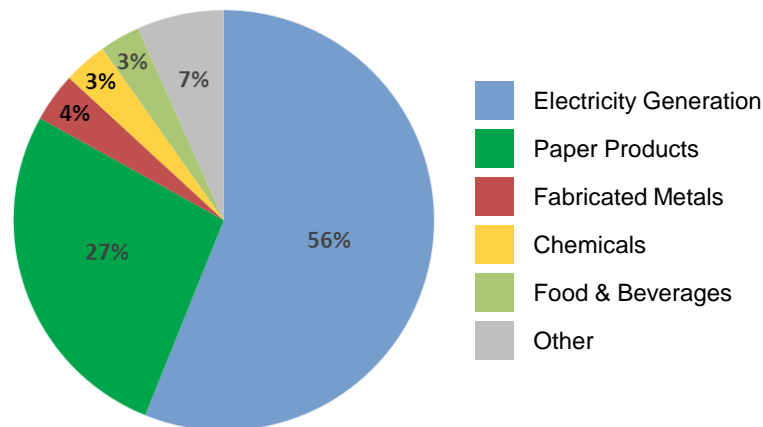
<sup>a</sup> These numbers reflect the total number of pounds of toxic air pollution from the state's entire electric sector, not simply those plants listed in the table.



# Toxic Industrial Air Pollution in Maryland



## 2010 Toxic Air Pollution by Sector



Sector	Toxic Air Pollution (lb)	% of Total Toxic Air Pollution
Electricity Generation	3,126,022	56%
Paper Products	1,501,588	27%
Fabricated Metals	210,839	4%
Chemicals	187,075	3%
Food & Beverages	172,659	3%
Other	373,246	7%
<b>Total<sup>a</sup></b>	<b>5,571,429</b>	<b>100%</b>

<sup>a</sup> Numbers may not sum due to rounding.

## Maryland Key Facts

### Toxic Air Pollution

Maryland's electric sector ranked **19th** in industrial toxic air pollution in 2010, emitting more than **3.1 million pounds** of harmful chemicals, which accounted for **56 percent** of state pollution and about **1 percent** of toxic pollution from all U.S. power plants.

### Mercury Pollution

Maryland ranked **39th** among all states in industrial mercury air pollution from power plants with about **150 pounds** emitted in 2010, which accounted for **17 percent** of state mercury air pollution and less than **1 percent** of U.S. electric sector pollution.

## 2010 Top Power Plant Polluters

Plant Name	Owner(s)	Toxic Air Pollution (lb)		Controls	Repower	Retire
		All Toxics	Mercury			
Herbert A Wagner	Constellation	1,702,941	70			
Morgantown	GenOn	442,704	19			
Brandon Shores	Constellation	233,696	10	●		
Dickerson	GenOn	223,097	12			
Chalk Point LLC	GenOn	162,109	20			
C P Crane	Constellation	159,573	12	●		
R Paul Smith	Allegheny Energy	155,018	11			●
AES Warrior Run	AES	46,833	0			
Perryman	Constellation	51	0			
<b>State Total<sup>a</sup></b>		<b>3,126,022</b>	<b>154</b>			

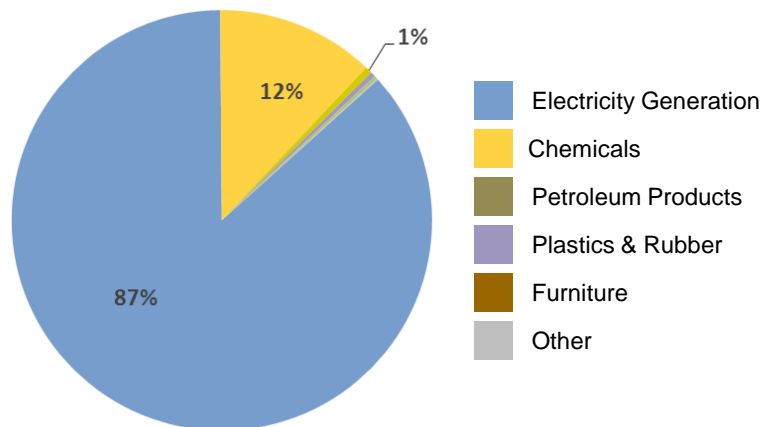
<sup>a</sup> These numbers reflect the total number of pounds of toxic air pollution from the state's entire electric sector, not simply those plants listed in the table.



# Toxic Industrial Air Pollution in Delaware



## 2010 Toxic Air Pollution by Sector



Sector	Toxic Air Pollution (lb)	% of Total Toxic Air Pollution
Electricity Generation	2,942,946	87%
Chemicals	414,374	12%
Petroleum Products	17,897	1%
Plastics & Rubber	13,171	0%
Furniture	7,963	0%
Other	4,214	0%
<b>Total<sup>a</sup></b>	<b>3,400,565</b>	<b>100%</b>

<sup>a</sup> Numbers may not sum due to rounding.

## Delaware Key Facts

### Toxic Air Pollution

Delaware's electric sector ranked **20th** in industrial toxic air pollution in 2010, emitting more than **2.9 million pounds** of harmful chemicals, which accounted for **87 percent** of state pollution and about **1 percent** of toxic pollution from all U.S. power plants.

### Mercury Pollution

Delaware ranked **40th** among all states in industrial mercury air pollution from power plants with about **110 pounds** emitted in 2010, which accounted for **64 percent** of state mercury air pollution and less than **1 percent** of U.S. electric sector pollution.

## 2010 Top Power Plant Polluters

Plant Name	Owner(s)	Toxic Air Pollution (lb)		Controls	Repower	Retire
		All Toxics	Mercury			
Indian River	NRG	2,547,153	90	●		●
Edge Moor	Calpine	278,180	11		●	
NRG Energy Center Dover	NRG	117,613	7		●	
<b>State Total<sup>a</sup></b>		<b>2,942,946</b>	<b>108</b>			

<sup>a</sup> These numbers reflect the total number of pounds of toxic air pollution from the state's entire electric sector, not simply those plants listed in the table.



# Appendix: State Summary Table – All Toxics

State	Electric Sector Rank	Electric Sector Rank by In-State Toxic Air Pollution	Total Industrial Toxic Air Pollution (lb)	Electric Sector Toxic Air Pollution (lb)	Electric Sector Contribution to Industrial Toxic Air Pollution (%)	Status of State Mercury Regulations
Alabama	14	2	25,842,339	8,291,061	32%	
Alaska	46	1	157,501	60,689	39%	
Arizona	36	1	2,060,866	847,781	41%	●
Arkansas	31	4	12,123,522	1,075,530	9%	
California	41	8	7,058,614	210,766	3%	
Colorado	35	1	1,767,553	904,007	51%	
Connecticut	42	1	926,258	209,023	23%	●
Delaware	20	1	3,400,565	2,942,946	87%	●
District of Columbia	48	1	56	53	94%	
Florida	6	1	29,319,543	16,662,542	57%	
Georgia	9	1	37,276,778	13,438,115	36%	●
Hawaii	28	1	1,487,335	1,307,173	88%	
Idaho	50	N/A	3,233,805	0	0%	
Illinois	16	3	23,809,122	4,665,396	20%	●
Indiana	4	1	40,370,621	26,234,197	65%	
Iowa	22	4	15,411,830	2,468,152	16%	
Kansas	29	2	7,282,651	1,277,711	18%	
Kentucky	1	1	51,870,725	40,564,585	78%	
Louisiana	26	4	34,625,881	1,526,995	4%	
Maine	49	16	2,867,733	5	0%	
Maryland	19	1	5,571,429	3,126,022	56%	●
Massachusetts	27	1	2,313,944	1,421,967	61%	●
Michigan	7	1	25,635,516	15,543,430	61%	●
Minnesota	30	2	7,407,472	1,234,681	17%	●
Mississippi	17	2	16,107,872	3,989,857	25%	
Missouri	15	1	9,497,685	5,114,713	54%	



- State has electric sector mercury regulations that are **at least as** stringent as the EPA's proposed utility air toxics rule.
- State has electric sector mercury regulations that are **less** stringent than the EPA's proposed utility air toxics rule.

Sources: U.S. EPA Toxic Release Inventory (2010 data), accessed May 2012; state environmental departments.

# Appendix: State Summary Table – All Toxics (Continued)

State	Electric Sector Rank	Electric Sector Rank by In-State Toxic Air Pollution	Total Industrial Toxic Air Pollution (lb)	Electric Sector Toxic Air Pollution (lb)	Electric Sector Contribution to Industrial Toxic Air Pollution (%)	Status of State Mercury Regulations
Montana	37	1	1,502,210	600,079	40%	●
Nebraska	23	1	5,476,308	2,150,858	39%	
Nevada	40	1	472,509	245,344	52%	
New Hampshire	21	1	3,047,462	2,845,747	93%	●
New Jersey	25	1	3,148,803	1,710,900	54%	●
New Mexico	39	1	645,920	316,934	49%	
New York	24	2	7,305,280	2,018,686	28%	●
North Carolina	8	1	30,774,704	14,634,490	48%	●
North Dakota	33	2	3,803,232	992,506	26%	
Ohio	2	1	58,658,893	36,405,858	62%	
Oklahoma	32	3	15,540,023	1,060,983	7%	
Oregon	43	7	5,252,958	112,825	2%	●
Pennsylvania	3	1	40,268,834	31,482,857	78%	
Rhode Island	47	2	131,669	24,738	19%	
South Carolina	13	1	26,226,868	9,343,200	36%	●
South Dakota	44	3	762,482	112,557	15%	
Tennessee	11	1	26,378,092	9,640,464	37%	
Texas	10	2	41,580,372	10,454,140	25%	
Utah	34	2	7,189,586	933,284	13%	●
Vermont	50	N/A	27,435	0	0%	
Virginia	12	1	23,625,566	9,474,271	40%	
Washington	45	8	6,550,330	92,940	1%	
West Virginia	5	1	22,358,811	18,101,675	81%	
Wisconsin	18	2	12,509,521	3,574,179	29%	●
Wyoming	38	1	1,460,940	531,765	36%	
<b>U.S. Total</b>	<b>N/A</b>	<b>1</b>	<b>712,126,023</b>	<b>309,978,677</b>	<b>44%</b>	



- State has electric sector mercury regulations that are **at least as** stringent as the EPA's proposed utility air toxics rule.
- State has electric sector mercury regulation that are **less** stringent than the EPA's proposed utility air toxics rule.

Sources: U.S. EPA Toxic Release Inventory (2010 data), accessed May 2012; state environmental departments.

# Appendix: State Summary Table – Mercury

State	Electric Sector Rank - Mercury	Electric Sector Rank by In-State Mercury Air Pollution (Among Sectors)	Total Industrial Mercury Air Pollution (lb)	Electric Sector Mercury Air Pollution (lb)	Electric Sector Contribution to Industrial Mercury Air Pollution (%)	Status of State Mercury Regulations
Alabama	6	1	4,697	3,002	64%	
Alaska	45	1	43	18	41%	
Arizona	14	1	2,321	1,835	79%	●
Arkansas	18	1	2,431	1,464	60%	
California	46	6	2,462	6	0%	
Colorado	28	1	886	645	73%	
Connecticut	43	1	49	49	100%	●
Delaware	40	1	167	108	64%	●
District of Columbia	47	N/A	0	0	N/A	
Florida	15	1	2,271	1,709	75%	
Georgia	22	1	1,530	1,154	75%	●
Hawaii	44	1	50	42	84%	
Idaho	47	3	601	0	0%	
Illinois	12	1	2,883	1,984	69%	●
Indiana	5	1	4,049	3,172	78%	
Iowa	11	1	2,740	2,060	75%	
Kansas	17	1	1,718	1,498	87%	
Kentucky	9	1	2,821	2,287	81%	
Louisiana	19	1	2,285	1,443	63%	
Maine	47	4	40	0	0%	
Maryland	39	3	888	154	17%	●
Massachusetts	42	1	60	53	88%	●
Michigan	10	1	2,740	2,253	82%	●
Minnesota	26	1	1,007	876	87%	●
Mississippi	25	1	1,130	951	84%	
Missouri	4	1	4,495	3,833	85%	



- State has electric sector mercury regulations that are **at least as** stringent as the EPA's proposed utility air toxics rule.
- State has electric sector mercury regulation that are **less** stringent than the EPA's proposed utility air toxics rule.

Sources: U.S. EPA Toxic Release Inventory (2010 data), accessed May 2012; state environmental departments.

# Appendix: State Summary Table – Mercury (Continued)

State	Electric Sector Rank - Mercury	Electric Sector Rank by In-State Mercury Air Pollution (Among Sectors)	Total Industrial Mercury Air Pollution (lb)	Electric Sector Mercury Air Pollution (lb)	Electric Sector Contribution to Industrial Mercury Air Pollution (%)	Status of State Mercury Regulations
Montana	38	1	255	173	68%	●
Nebraska	23	1	1,439	1,099	76%	
Nevada	37	2	1,347	176	13%	
New Hampshire	36	1	195	194	99%	●
New Jersey	41	1	114	88	78%	●
New Mexico	30	1	504	485	96%	
New York	34	1	617	259	42%	●
North Carolina	24	1	2,032	957	47%	●
North Dakota	8	1	2,403	2,363	98%	
Ohio	2	1	5,783	4,207	73%	
Oklahoma	13	1	2,066	1,846	89%	
Oregon	35	2	1,093	206	19%	●
Pennsylvania	3	1	6,232	3,963	64%	
Rhode Island	47	2	0	0	0%	
South Carolina	29	2	1,747	565	32%	●
South Dakota	33	1	308	290	94%	
Tennessee	21	1	1,920	1,249	65%	
Texas	1	1	16,313	12,737	78%	
Utah	31	1	881	343	39%	●
Vermont	47	N/A	0	0	0%	
Virginia	27	1	985	659	67%	
Washington	32	1	559	331	59%	
West Virginia	7	1	2,836	2,495	88%	
Wisconsin	20	1	1,538	1,328	86%	●
Wyoming	16	1	1,636	1,589	97%	
<b>U.S. Total</b>	<b>N/A</b>	<b>1</b>	<b>97,173</b>	<b>68,199</b>	<b>70%</b>	

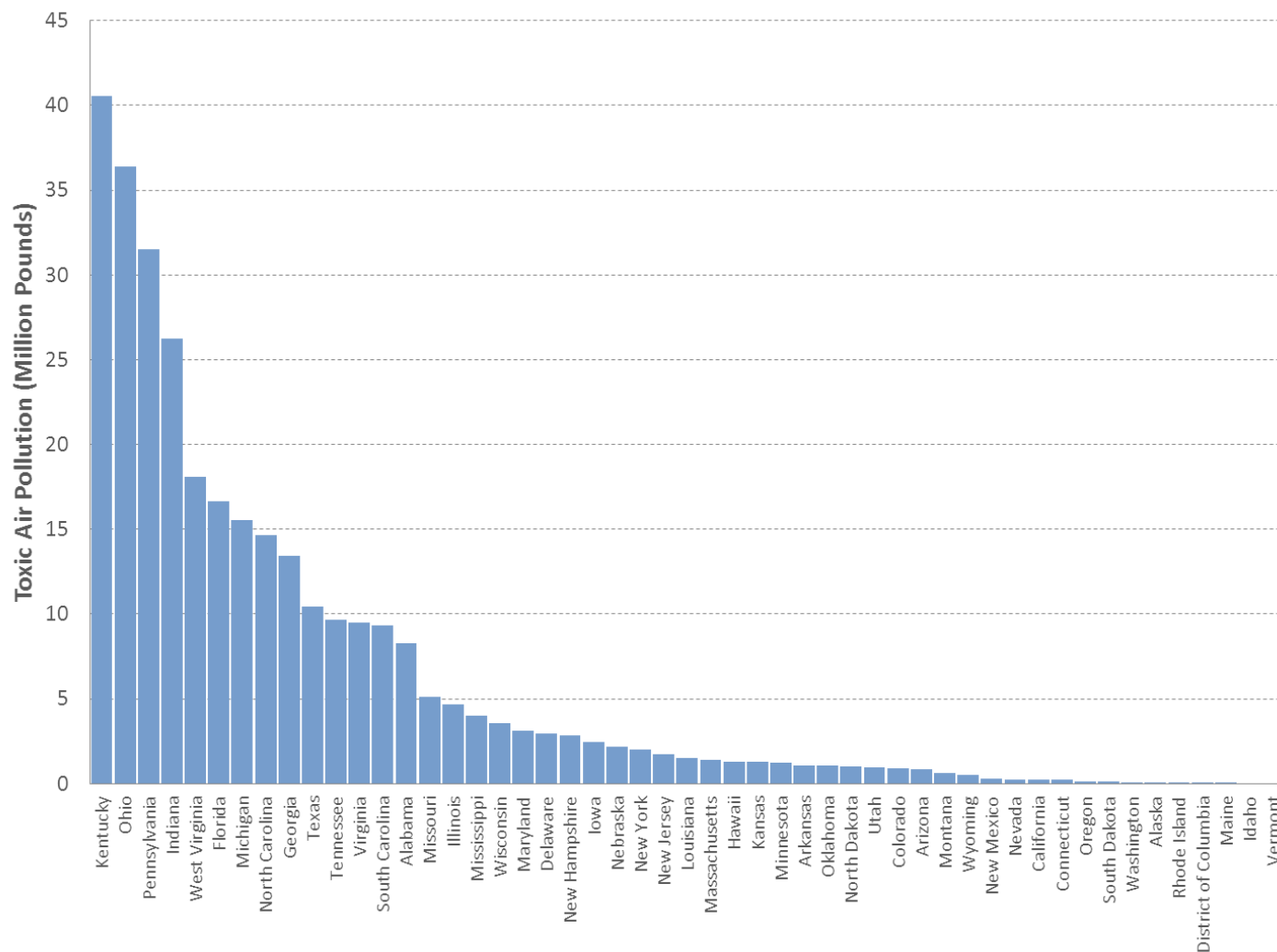


- State has electric sector mercury regulations that are **at least as** stringent as the EPA's proposed utility air toxics rule.
- State has electric sector mercury regulation that are **less** stringent than the EPA's proposed utility air toxics rule.

Sources: U.S. EPA Toxic Release Inventory (2010 data), accessed May 2012; state environmental departments.



# Appendix: Electric Sector Toxic Air Pollution by State



# Methodology

## Obtaining Toxic Release Inventory (TRI) Data

This report relies on the updated 2010 TRI data, which was accessed using the TRI.NET application provided by the EPA here: <http://www.epa.gov/tri/tridotnet/index.html>. The 2010 dataset ("TRI 2010: NA 2010") was downloaded in May 2012. Any subsequent revisions to the 2010 data are not reflected in this report. The following methodology describes how the TRI data were obtained and exactly what was considered in this report.

- State-Level Toxic Air Emissions:
  1. Using the TRI.NET Data Engine build a new query.
  2. Under "FILTERING Variables" select all chemicals, all industries, all states, and the 2010 data year.
  3. In "Releases" under "DATA Variables" select: "Point Source Air Emissions."
  4. Under "GROUPING Variables" select: Industry, State, and Year.
  5. Run query and export data to Excel.
- Plant-Level Toxic Air Emissions:
  1. Using the TRI.NET Data Engine build a new query.
  2. Under "FILTERING Variables" select: all chemicals, all states, and the 2010 data year.
  3. Under "FILTERING Variables" in the "Industry" folder select: "NAICS 2211 – Electric Utilities."
  4. Under "DATA Variables" in the "Releases" folder select: "Point Source Air Emissions."
  5. Under "GROUPING Variables" select: TRI ID, Chemical, Industry, Name, Address, City, State, and Year.

For all U.S. totals, only the 50 states and the District of Columbia were included.

## Matching TRI Data to EIA-860

TRI facility identification numbers (TRI IDs) were matched with EIA plant codes for the top 10 emitters in each of the selected states using plant names and address information included in both the TRI and the EIA-860. Since TRI data are reported at the site-level, some TRI IDs reflect emissions from two or more power plants. In these cases, the TRI emissions were apportioned based on the plants' 2010 emissions of sulfur dioxide (SO<sub>2</sub>) from EPA's Air Program Markets Data (APMD). SO<sub>2</sub> emissions are used as a proxy for apportioning the air toxics, reflecting both the relative utilization and pollution control equipment at each plant.

## Plant Ownership Information

Plant ownership is primarily derived from the EIA-860 database. In some cases, company 10-K filings were used to confirm the holding company. For plants included in this report, only entities with at least a 20 percent ownership interest in a particular plant are listed. Smaller ownership interested were grouped as "Others." Owners are listed in descending order by ownership percentage.

## Pollution Control Information

Plants that have installed pollution controls since 2010 that might significantly reduce emissions of toxic pollution and plants that are currently constructing such equipment are recognized in this report. The installation of the following types of pollution control equipment is recognized in this report when known: flue gas desulfurization, dry sorbent injection, activated carbon injection, and fabric filters. While considerable effort was expended in ensuring the accuracy of the ownership information, retrofits, repowering, and plant retirements, there may be inadvertent errors for some plants where public information was either not current or could not be verified.

# Methodology

## Industry Classifications

Covered sources report the North American Industry Classification System (NAICS) codes that apply to them and are classified by their primary sector in the TRI database. For simplicity, the industry sector names used in EPA's Toxics Release Inventory were adjusted in accordance with the table below. For each state, industries beyond the top five emitting sectors were grouped together and categorized as "Other."

EPA Toxic Release Inventory NAICS Code & Industry Name	Revised Sector Name
311 Food/Beverages/Tobacco	Food & Beverages
313 Textiles	Textiles
315 Apparel	Apparel
316 Leather	Leather
321 Wood Products	Wood Products
322 Paper	Paper Products
323 Printing and Publishing	Printing & Publishing
324 Petroleum	Petroleum Products
325 Chemicals	Chemicals
326 Plastics and Rubber	Plastics & Rubber
327 Stone/Clay/Glass	Stone, Clay, & Glass
3273 Cement	Cement
331 Primary Metals	Primary Metals
332 Fabricated Metals	Fabricated Metals
333 Machinery	Machinery
334 Computers/Electronic Products	Computers & Electronics
335 Electrical Equipment	Electrical Equipment
336 Transportation Equipment	Transportation Equipment
337 Furniture	Furniture
339 Miscellaneous Manufacturing	Miscellaneous Manufacturing
ZZZ No TRI NAICS code	Other
2121 Coal Mining	Coal Mining
2122 Metal Mining	Metal Mining
2211 Electric Utilities	Electricity Generation
4246 Chemical Wholesalers	Chemical Wholesalers
4247 Petroleum Bulk Terminals	Petroleum Terminals
562 Hazardous Waste/Solvent Recovery	Hazardous Waste

# Sources

## **U.S. ENVIRONMENTAL PROTECTION AGENCY, TOXICS RELEASE INVENTORY (TRI):**

*Description & Use:* Certain electric generating facilities, along with facilities from other industries, report to the TRI. Electric generating facilities that combust coal or oil are required to report releases of designated pollutants to the TRI if the quantity of each pollutant released meets or exceeds specific thresholds. Releases include point source air emissions. Generally, the reporting threshold for electric generating facilities is 25,000 pounds or more of an individual pollutant. However, the threshold for certain persistent, bioaccumulative, and toxic (PBT) chemicals, such as mercury and mercury compounds, is significantly lower. The reporting threshold for mercury and mercury compounds is 10 pounds. Reporting thresholds are applied to each pollutant individually. Facilities that combust only natural gas are exempt from the TRI reporting requirements. The TRI data are self-reported by covered sources, and EPA does not require specific methodologies for measuring or estimating releases. Therefore, methodologies vary from source to source. The TRI served as the source for all emissions data referenced in this report. While the TRI may not reflect total U.S. or sector-level emissions, it covers most large stationary sources of toxic air pollutants and provides useful information on emissions trends.

*Citation:* U.S. Environmental Protection Agency. 2012. Toxics Release Inventory (TRI), 2010 Inventory Updated Dataset – Point Source Air Emissions. URL: <http://www.epa.gov/tri/tridata/index.html>. (Accessed May 2012 through TRI.NET application: <http://www.epa.gov/tri/tridotnet/index.html>).

## **U.S. ENVIRONMENTAL PROTECTION AGENCY, NATIONAL ELECTRIC ENERGY DATA SYSTEM v.4.10 (NEEDS):**

*Description & Use:* EPA uses NEEDS as the basis for its IPM modeling efforts to project the impact of proposed policy changes. NEEDS contains information on the operating and emissions characteristics of most generating units in the U.S. NEEDS served as the basis for information on recently installed pollution controls included in this report. This information was checked against company press releases, websites, and new articles to verify the validity of the NEEDS data.

*Citation:* U.S. Environmental Protection Agency. 2010. NEEDS v.4.10 database. URL: <http://www.epa.gov/airmarkets/progsregs/epa-ipm/BaseCasev410.html>. (Accessed June 2011).

## **U.S. ENERGY INFORMATION ADMINISTRATION, FORM-860 ANNUAL ELECTRIC GENERATOR REPORT (EIA-860):**

*Description & Use:* The database includes generator-level data for electric generating facilities, including ownership information and site addresses. This database served as the primary source for the ownership information included in this report. In some cases, company 10-K filings were used to confirm the holding company.

*Citation:* U.S. Energy Information Administration. 2011. Form EIA-860 Annual Electric Generator Report, 2010. URL: <http://www.eia.gov/cneaf/electricity/page/eia860.html>. Accessed May 2012.