Michigan's Dirtiest Power Plants

The outsized impact power production has on our planet

Powering our economy is warming our planet

Electricity powers all aspects of our lives, but the way it is generated is accelerating climate change. There are still more than 3,400 fossil-fuel fired power plants operating in the United States today, and electricity production is Michigan's largest source of global warming pollution. However, a small number of dirty power plants have an outsized impact on our planet. That is why we are calling on EPA and Congress to take aggressive action to limit global warming pollution from power plants.

The top 10 dirtiest power plants in Michigan have an outsized impact on our planet

Michigan is home to 3 of the top 100 most polluting power plants in the U.S. The dirtiest power plants contribute a huge amount of planet-warming emissions relative to the electricity they generate. In 2020, Michigan's top 10 most climate-polluting plants were responsible for 85.7% of carbon dioxide equivalent emissions from the power sector despite only generating 52% of total electricity. The total emissions of Michigan's top 10 power plants are 38.9 million metric tons, which is equivalent to 8.4 million cars on the road for a year.

All 10 facilities are powered by fossil fuels: 5 primarily coal-fired plants and 5 primarily methane gas-fired plants. When fossil fuels are burned for electricity production, they release greenhouse gases into the atmosphere, including carbon dioxide, methane, and nitrous oxide, which speeds up global warming.

The average operating coal plant in America is 45 years old and many of these plants are also outdated and inefficient. To keep up with today's energy demands and to meet our climate goals, it is beyond time to get power plant pollution under control.

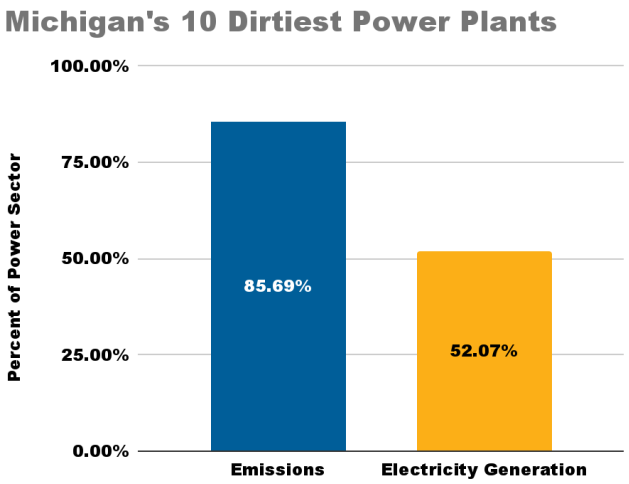

Figure 1: The 10 dirtiest power plants contribute significantly to power sector emissions relative to electricity generation, 2020

Cleaning up power plant pollution

To rein in dirty power pollution, we have to set strong regulations. We can learn from state and regional policies that have been successful in the past decade at controlling climate damaging pollution.

The Regional Greenhouse Gas Initiative has helped reduce carbon dioxide (CO_2) pollution from power plants in the Northeast and Mid-Atlantic by placing a cap on CO_2 emissions. From 2005 to 2017, power plant CO_2 pollution fell by 60% in the nine states that participated in that period.

Many states also have renewable electricity standards in place, which require an increasing percentage of power to be produced from renewable sources. However, to tackle the dirtiest power plants across the country, we need to enact stronger climate policies on the federal level.

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Figure 2: The Top 10 Dirtiest Power Plants in Michigan, 2020

Rank	Plant Name	County	Primary fuel	2020 Carbon Dioxide Equivalent Emissions (Metric Tons)
1	Monroe	Monroe	Coal	13,054,699
2	J H Campbell**	Ottawa	Coal	6,788,546
3	Belle River	St Clair	Coal	4,587,012
4	Midland Cogeneration Venture	Midland	Gas	3,464,233
5	New Covert Generating Project	Van Buren	Gas	2,793,828
6	Dan E Karn**	Bay	Coal	1,927,128
7	St. Clair*	St Clair	Coal	1,908,690
8	Zeeland Generating Station	Ottawa	Gas	1,780,361
9	Dearborn Industrial Generation	Wayne	Gas	1,776,967
10	Jackson Generating Station	Jackson	Gas	793,689

* Plant has been partially or fully retired by the release of this factsheet.
** Plant will be partially or fully retired by the end of 2025.

Our climate can't wait

Every year, the impacts of climate change are more pronounced. The last seven years have been the seven "hottest in recorded history". Warming temperatures and intensifying drought will cause wildfire seasons to start earlier and last longer. And climbing ocean temperatures are increasing the frequency of extreme hurricanes.

The International Panel on Climate Change has stated that greenhouse gas emissions must peak no later than 2025 to avoid the worst impacts of climate change. This will require both putting strong controls on our dirtiest energy sources and rapidly ramping up clean energy deployment across the power sector.

Methane gas is not the answer

In the past decade, more and more coal plants have been decommissioned to be replaced with methane gas as the advent of fracking unleashed a glut of cheap gas fuel. For years, methane gas was marketed as a green "bridge fuel" between coal and renewables. However, while burning methane gas releases less carbon dioxide than coal per kilowatt of electricity produced, that is only part of methane's climate impact.

Methane gas is an extremely potent greenhouse gas that has 83 times the warming potential of carbon dioxide in a 20 year timescale and 30 times the warming potential in a 100 year timescale. Methane leaks also occur during both the extraction and distribution processes.

These methane leaks frequently occur unchecked and are severely underreported. According to a recent International Energy Agency study, methane emissions are 70% higher than reported by government officials.

Once built, methane gas plants are meant to last for decades, locking in our dependence on fossil fuels and accelerating climate change. Clean energy sources like solar and wind are already ready to be deployed at scale and are now often just as cheap. We need to replace aging, dirty fossil fuel-fired plants with these renewable energy sources to achieve necessary greenhouse gas reductions and protect our climate.

Policy recommendations

It is going to take action at all levels of government to get power plant pollution under control. To act at the speed that scientists say is necessary to maintain a livable planet, we need to both put strong limits on existing fossil-fuel fired plants and accelerate the transition to renewable energy.

- The EPA should enact the strongest possible limits on carbon dioxide pollution from new and existing power plants.
- Congress should pass a climate package that includes extending and expanding clean energy tax credits.
- States, cities, and counties should commit to achieving 100% renewable energy for their communities.

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Appendix 1: Top 100 Dirtiest Power Plants in the United States, 2020

This table includes the top 100 power plants with the most carbon dioxide-equivalent emissions in the U.S. Data for this ranking comes from the Environmental Protection Agency's (EPA) eGRID 2020 dataset, downloaded on May 17, 2022. Included with the emissions rankings are the plant name, plant operator, and a comparison in millions of passenger vehicles using the EPA's greenhouse gas equivalencies calculator. Data for the planned retirements comes from the Energy Information Administration's (EIA) Electric Power Monthly, downloaded data for planned retirements on May 23, 2022. Data for retirements as of the release of this factsheet comes from the EIA's Electric Power Monthly, both current issue and past issues covering retirements from Jan 2020 - Mar 2023, downloaded on May 23, 2022.

A single asterisk (*) by the plant name indicates the plant has been partially or fully retired by the release of this factsheet, and a double asterisk (**) by the plant name indicates the plant will be partially or fully retired by the end of 2025.

Rank	State	Plant Name	County	Primary Fuel	2020 Carbon Dioxide Equivalent Emissions (Million Metric Tons)	Emissions Equivalent in Passenger Vehicles
1	AL	James H Miller Jr	Jefferson	COAL	17.22	3,710,404
2	MO	Labadie	Franklin	COAL	15.72	3,386,779
3	OH	Gen J M Gavin	Gallia	COAL	13.77	2,967,935
4	TX	Martin Lake	Rusk	COAL	13.53	2,914,601
5	TX	Oak Grove	Robertson	COAL	13.11	2,823,849
6	MI	Monroe	Monroe	COAL	13.05	2,812,886
7	IL	Prairie State Generating Station	St Clair	COAL	11.86	2,556,064
8	IN	Gibson	Gibson	COAL	11.40	2,455,387
9	WY	Jim Bridger	Sweetwater	COAL	11.22	2,418,008
10	TX	W A Parish	Fort Bend	COAL	10.40	2,241,289
11	WV	John E Amos	Putnam	COAL	10.23	2,203,511
12	WV	Harrison Power Station	Harrison	COAL	9.82	2,116,678
13	KY	Ghent	Carroll	COAL	9.65	2,078,834
14	TN	Cumberland	Stewart	COAL	9.50	2,047,247
15	TX	Sam Seymour	Fayette	COAL	9.37	2,018,295
16	WY	Laramie River	Platte	COAL	9.34	2,013,220
17	OH	Cardinal	Jefferson	COAL	9.23	1,988,319
18	MN	Sherburne County**	Sherburne	COAL	8.64	1,861,997
19	MT	Colstrip	Rosebud	COAL	8.34	1,797,115
20	AZ	Springerville Generating Station	Apache	COAL	8.02	1,728,838
21	NE	Nebraska City Station	Otoe	COAL	8.02	1,727,243
22	UT	Hunter	Emery	COAL	7.97	1,717,218
23	GA	Bowen	Bartow	COAL	7.93	1,708,916
24	ND	Coal Creek	McLean	COAL	7.85	1,691,596
25	FL	Crystal River	Citrus	COAL	7.79	1,679,216

Appendix 1 (cont.)

Rank	State	Plant Name	County	Primary Fuel	2020 Carbon Dioxide Equivalent Emissions (Million Metric Tons)	Emissions Equivalent in Passenger Vehicles
26	KY	Trimble County	Trimble	COAL	7.75	1,670,828
27	CO	Craig**	Moffat	COAL	7.71	1,660,446
28	NM	Four Corners Steam Elec Station	San Juan	COAL	7.52	1,620,399
29	KS	Jeffrey Energy Center	Pottawatomie	COAL	7.45	1,605,079
30	PA	Keystone	Armstrong	COAL	7.26	1,563,824
31	PA	Conemaugh	Indiana	COAL	7.18	1,546,568
32	WI	Elm Road Generating Station	Milwaukee	COAL	7.07	1,524,354
33	FL	West County Energy Center	Palm Beach	GAS	7.03	1,515,714
34	GA	Jack McDonough	Cobb	GAS	6.89	1,484,096
35	MO	Rush Island**	Jefferson	COAL	6.87	1,479,946
36	GA	Scherer	Monroe	COAL	6.86	1,477,597
37	MI	J H Campbell**	Ottawa	COAL	6.79	1,462,723
38	MO	Thomas Hill Energy Center	Randolph	COAL	6.74	1,453,110
39	NE	Gerald Gentleman Station	Lincoln	COAL	6.68	1,439,218
40	SC	Cross	Berkeley	COAL	6.66	1,435,299
41	IN	IPL - Petersburg Generating Station**	Pike	COAL	6.58	1,417,363
42	FL	Seminole (136)**	Putnam	COAL	6.41	1,380,897
43	KY	Mill Creek	Jefferson	COAL	6.40	1,378,745
44	OH	Miami Fort Power Station	Hamilton	COAL	6.39	1,377,282
45	KY	H L Spurlock	Mason	COAL	6.33	1,363,987
46	KS	La Cygne	Linn	COAL	6.32	1,361,849
47	UT	Intermountain**	Millard	COAL	6.30	1,358,268
48	MO	Iatan	Platte	COAL	6.30	1,357,918
49	ND	Antelope Valley	Mercer	COAL	6.29	1,354,642
50	AL	Barry	Mobile	COAL	6.23	1,343,236

Appendix 1 (cont.)

Rank	State	Plant Name	County	Primary Fuel	2020 Carbon Dioxide Equivalent Emissions (Million Metric Tons)	Emissions Equivalent in Passenger Vehicles
51	TX	Limestone	Limestone	COAL	6.13	1,320,518
52	WA	Centralia**	Lewis	COAL	5.84	1,258,494
53	MS	Daniel Electric Generating Plant	Jackson	COAL	5.83	1,255,749
54	TX	J K Spruce	Bexar	COAL	5.79	1,248,569
55	NM	San Juan**	San Juan	COAL	5.71	1,230,464
56	WI	Columbia**	Columbia	COAL	5.68	1,223,378
57	MO	New Madrid Power Plant	New Madrid	COAL	5.67	1,221,502
58	NC	Marshall	Catawba	COAL	5.58	1,203,044
59	NC	Roxboro	Person	COAL	5.20	1,119,823
60	OH	W H Sammis**	Jefferson	COAL	5.17	1,113,370
61	OH	W H Zimmer Generating Station*	Clermont	COAL	5.12	1,103,202
62	ND	Milton R Young	Oliver	COAL	5.10	1,099,405
63	LA	Brame Energy Center	Rapides	OIL	5.10	1,098,064
64	WV	Mountaineer (1301)	Mason	COAL	5.03	1,083,509
65	WY	Dave Johnston	Converse	COAL	4.93	1,062,908
66	IN	Alcoa Allowance Management Inc	Warrick	COAL	4.91	1,057,697
67	OH	Kyger Creek	Gallia	COAL	4.84	1,041,922
68	WV	Pleasants Power Station**	Pleasants	COAL	4.80	1,034,093
69	WV	Fort Martin Power Station	Monongalia	COAL	4.74	1,020,323
70	IA	Walter Scott Jr. Energy Center	Pottawattamie	COAL	4.73	1,020,103
71	AL	Plant H. Allen Franklin	Lee	GAS	4.72	1,016,607
72	WV	Mount Storm Power Station	Grant	COAL	4.70	1,012,831
73	IN	Clifty Creek	Jefferson	COAL	4.59	989,352
74	MN	Boswell Energy Center	Itasca	COAL	4.59	989,304
75	MI	Belle River	St Clair	COAL	4.59	988,360

Appendix 1 (cont.)

Rank	State	Plant Name	County	Primary Fuel	2020 Carbon Dioxide Equivalent Emissions (Million Metric Tons)	Emissions Equivalent in Passenger Vehicles
76	TX	Sandy Creek Energy Station	McLennan	COAL	4.52	973,471
77	UT	Huntington	Emery	COAL	4.49	967,158
78	CO	Comanche (470)**	Pueblo	COAL	4.47	962,283
79	AZ	Gila River Power Station	Maricopa	GAS	4.46	961,653
80	FL	Hines Energy Complex	Polk	GAS	4.46	959,984
81	FL	Curtis H. Stanton Energy Center**	Orange	COAL	4.45	958,076
82	NC	Belews Creek	Stokes	COAL	4.43	954,206
83	AR	White Bluff	Jefferson	COAL	4.41	949,765
84	LA	Ninemile Point	Jefferson	GAS	4.40	948,240
85	WV	Longview Power	Monongalia	COAL	4.35	936,937
86	KY	Shawnee	McCracken	COAL	4.30	926,984
87	FL	Martin	Martin	GAS	4.24	913,796
88	FL	Northside	Duval	GAS	4.21	906,295
89	NC	Cliffside	Cleveland	COAL	4.20	904,866
90	IN	Cayuga	Vermillion	COAL	4.14	891,961
91	IL	Baldwin Energy Complex**	Randolph	COAL	4.08	879,981
92	IL	Joppa Steam**	Massac	COAL	4.06	875,797
93	TX	Forney Power Plant	Kaufman	GAS	4.05	872,765
94	FL	Manatee	Manatee	GAS	4.04	870,840
95	IN	Rockport	Spencer	COAL	4.02	865,498
96	AZ	Cholla*	Navajo	COAL	3.82	822,075
97	VA	Greensville County Power Station	Greensville	GAS	3.80	819,820
98	OH	Hanging Rock Power Company LLC	Lawrence	GAS	3.80	819,336
99	AR	Union Power Station	Union	GAS	3.79	815,747
100	VA	Brunswick County Power Station	Brunswick	GAS	3.76	809,167