

FACT SHEET

CLEAN ELECTRICITY MICHIGAN: HOW FEDERAL POLICY CAN DELIVER CLEAN AIR AND IMPROVED HEALTH

With the passage of landmark state legislation this year, Michigan is on the road to a cleaner electricity system, one that will create new economic opportunities, lower bills for consumers, and create good jobs. Strong carbon pollution standards from the Environmental Protection Agency are now needed to ensure that Michigan’s future electricity system also cuts pollution and protects children’s health.

Clean energy is delivering big benefits to Michigan, and those benefits are set to accelerate in the years ahead. The state already has nearly 124,000 clean energy workers, the fifth most in the nation (Figure 1).¹ And the number of statewide clean energy jobs is poised to jump dramatically in the coming years, thanks to 22 new clean energy projects that have been announced in the state over the past year.²

Given Michigan’s leadership in the automotive sector, many of these investments are in the electric vehicle industry. Late last year, Governor Gretchen Whitmer signed historic

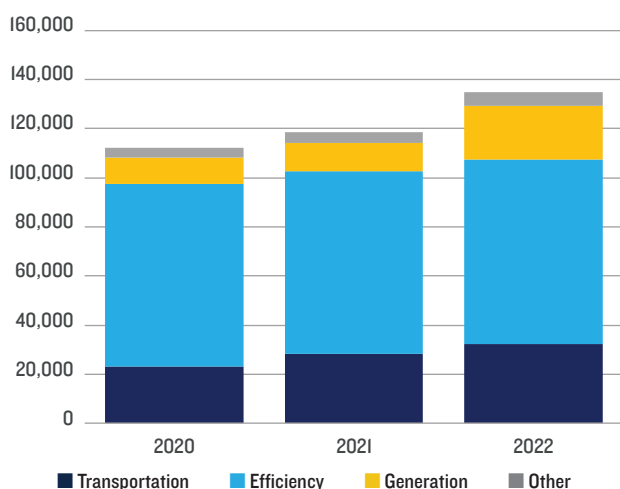
energy legislation into law to bring about a transition to clean electricity by 2040 in the state. Now, with the addition of the landmark federal Inflation Reduction Act (IRA) and trends in the industry, the state’s power sector is also poised for a dramatic overhaul.³

Michigan now needs the Environmental Protection Agency (EPA) to set strong carbon standards for power plants to lock in progress and deliver cuts in harmful climate pollution.

With the trends in place and the right EPA standards, Michigan’s wind, solar, and battery storage capacity is expected to grow fourfold, from 4.3 gigawatts today to 17.3 gigawatts by 2030, according to a new analysis by NRDC.⁴ Wind, solar, and battery storage is projected continue to prosper in the state throughout the 2030s, growing to more than 25 gigawatts by 2040 to become the state’s main source of electricity.

For context, these 25 gigawatts of renewable energy are expected to produce more power than every coal, gas, and oil plant in the state does now—and would be enough to meet 80 percent of the state’s total power needs today (Figure 2). In fact, it would be enough to supply every household in the state last year with electricity more than two times over.⁵ (Michigan’s industry consumes a lot of electricity, too, so the state needs a lot more power than what households consume.)

Figure 1: Clean Energy Jobs in Michigan Between 2020 and 2022



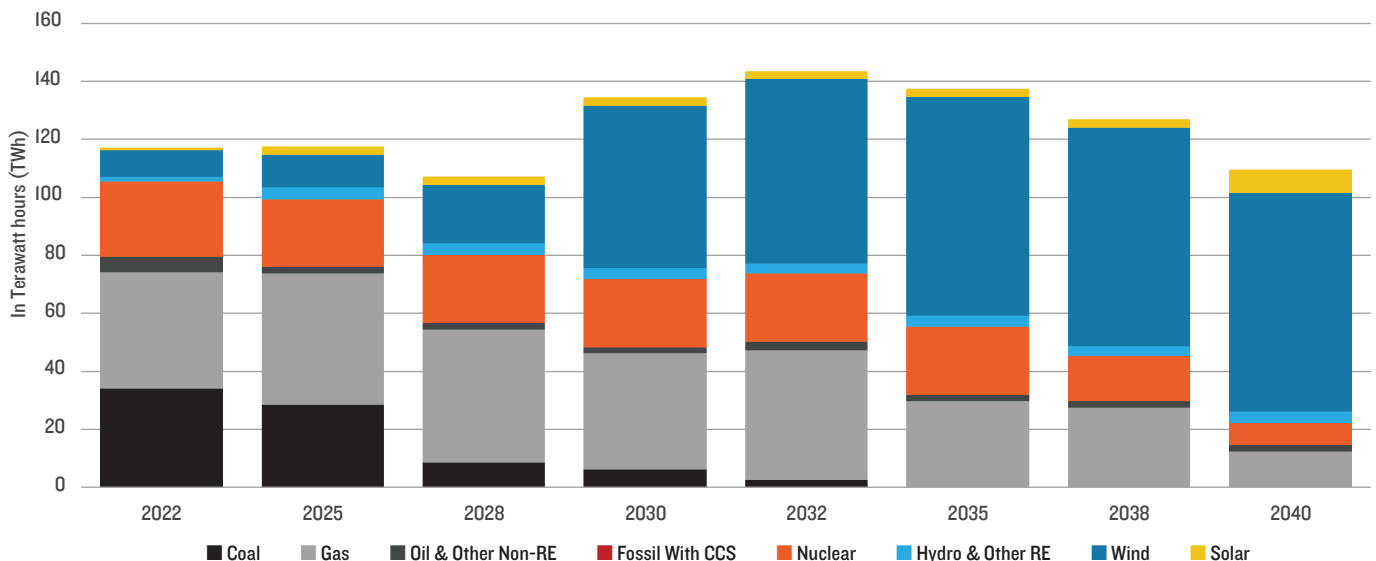


This new, clean energy will displace old, dirty fossil fuel plants that are set to close. The state’s two largest utilities, DTE Electric and Consumers Energy, had already committed to closing the state’s last coal plants by 2032.⁶ And the state’s new clean energy laws have established a renewable portfolio standard of 50 percent by 2030 and a path to 100 percent clean energy by 2040, as well as requiring more energy efficiency and reforming oversight of public utilities.⁷ These state efforts will help spur new solar, wind, and storage projects, while also creating jobs and saving consumers money on energy bills. These state mandates are both historic and achievable: according to NRDC’s model, within a decade, many of the existing gas plants will either close or run sparingly, as wind and solar power will be abundant and less expensive.

While the state legislation is the crucial piece of the puzzle toward moving Michigan forward, three larger factors are also critically important.

First, the economics of solar, wind, and battery technology has upended the electricity industry across the United States. The cost of installing new wind turbines has fallen by nearly 70 percent since 2009 and solar panels by a whopping 83 percent.⁸ Installing new renewable energy is already typically cheaper than building a gas plant, which is why solar, wind, and batteries are set to account for 85 percent of the new power capacity installed across the country this year.⁹

Figure 2: NRDC’s Projection of In-State Energy Generation with Implementation of IRA and EPA Carbon Pollution Standards



Notes: Analysis does not include Michigan’s new clean energy standard (S.B. 271). Oil & Other Non-RE (nonrenewable energy) includes biomass and other waste.

Second, the Inflation Reduction Act, which President Biden signed into law in August 2022, is providing extraordinary federal investment in clean energy.

This historic climate law includes unprecedented incentives for wind, solar, battery storage, and other low-carbon energy sources, in addition to tax credits for electric vehicle manufacturing and purchase. This measure will accelerate the trends already underway, putting the nation—and Michigan—on track for the fastest and most sustained build-out of renewable energy in the country’s history. Figure 3 shows all the state clean energy projects currently in development that will benefit from the law’s clean energy tax credits.

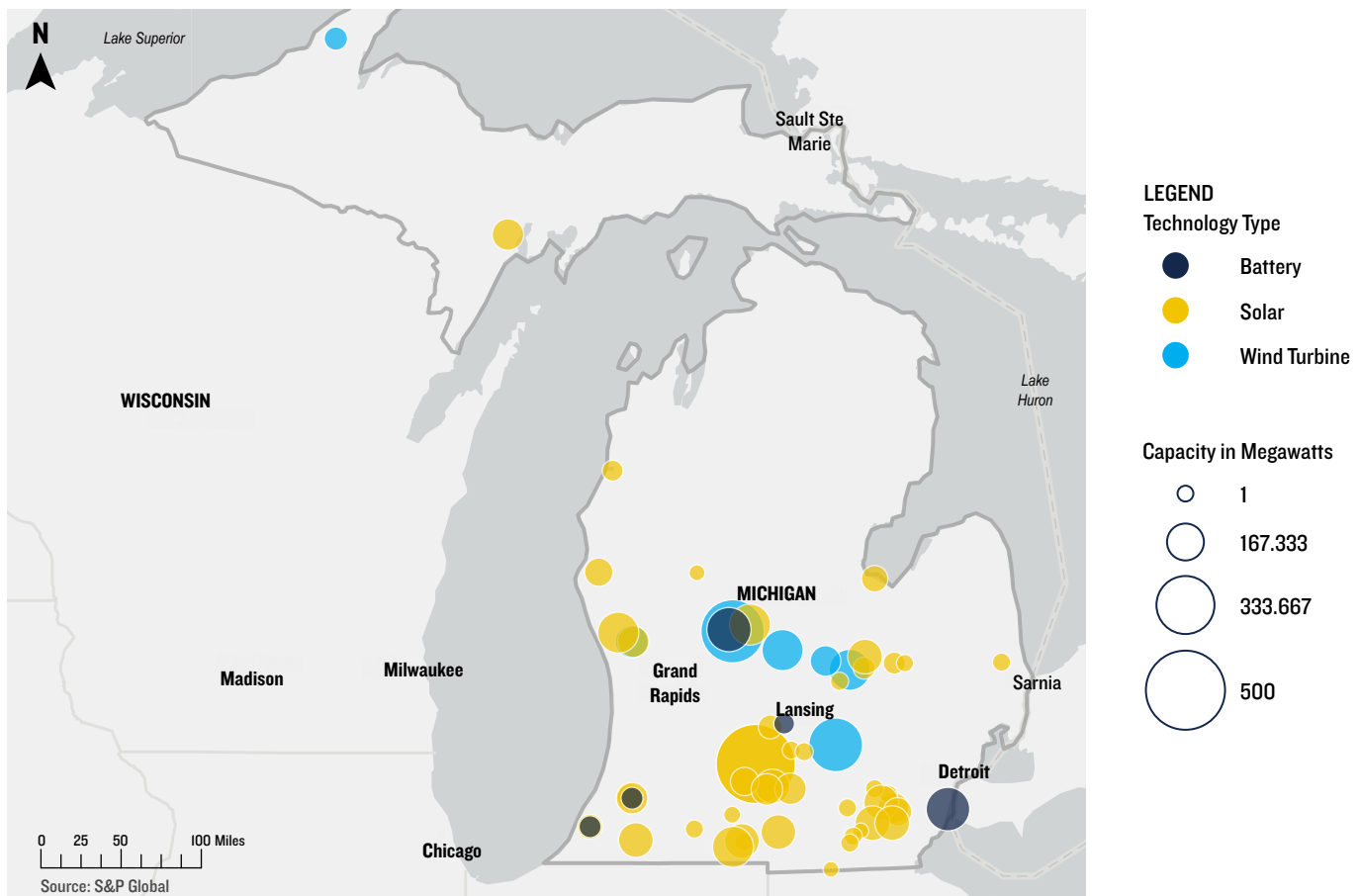
Third, and finally, the EPA is in the process of setting new standards that will ensure utilities and states cut their carbon pollution from power plants. In May 2023, EPA proposed carbon emissions limits on coal and gas plants based on efficient and reduced operations, the capabilities of carbon capture and sequestration, and clean hydrogen. Once finalized, the standards will set the emissions level that power plants must meet but will give companies and states broad flexibility to adopt strategies that achieve those results. NRDC modeling projects that industry trends and the IRA will deliver a 67 percent reduction in power-sector emissions

nationwide (relative to 2005 levels) by 2030; with the right EPA rules in place, emissions could be cut further, to a 73 percent reduction.

Taken together, the industry trends, the IRA, and the EPA standards can deliver massive benefits for Michigan. According to NRDC’s analysis:

- These projects will bring new investment and jobs to the state. The new wind, solar, and storage projects represent \$21 billion in new investment by 2030, which will grow to more than \$55 billion by 2040.
- Much of the investment will be in new wind-power plants, which are set to become the largest source of electricity generation in the state by the end of this decade.
- The share of the state’s electricity mix that comes from clean resources is projected to double between now and 2030, when it will be 62 percent of the total generation. By 2035, wind and solar will account for more electricity generation than *all* fossil fuel power in Michigan does today.
- Because wind, solar, and battery costs are falling so quickly, all of this progress can save consumers money. Taking inflation into account, household electricity bills are projected to be 5 percent less in 2040 than they will be in 2025 (in real terms).

Figure 3: Announced Clean Energy Projects in Michigan



HOW THE EPA STANDARDS WILL WORK IN MICHIGAN

In May 2023, EPA proposed national carbon reduction standards for fossil fuel power plants. The standards would cover existing coal plants and new and existing gas plants (new coal plants are already covered by earlier standards). The standards are legally sound: EPA is following the Supreme Court’s decision in *West Virginia v. EPA* by proposing standards that will “cause regulated sources to operate more cleanly” and will “improve the pollution performance of individual sources.”¹⁰

Under the Clean Air Act, EPA sets the emissions performance levels that sources must meet based on the “best system of emission reduction.” EPA’s proposed emissions limits are based on the capabilities of efficient generation, carbon capture and sequestration, and clean hydrogen technologies. Depending on the type of plant, including the size and how often it runs, plants have different dates and rules for compliance. In most cases, the emissions start to kick in by 2032 and all are fully in place by 2040. States and plant owners have broad flexibility to adopt any strategies that achieve the required emissions reductions.¹¹

EPA is planning to finalize these standards by April 2024, and that will start the next process for states to develop plans to achieve the emissions reductions the agency has laid out. Under the proposed rules, states will have two more years to develop their plans, and then EPA has a year to consider, review, and approve or reject each plan (Figure 4).

Figure 4. Expected Timeline for State Planning and Compliance with EPA Carbon Rules

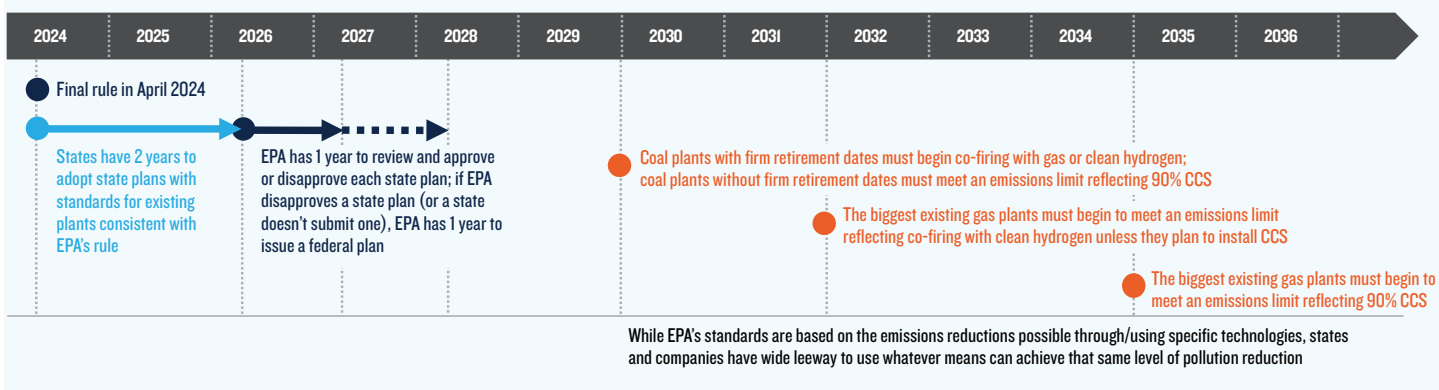
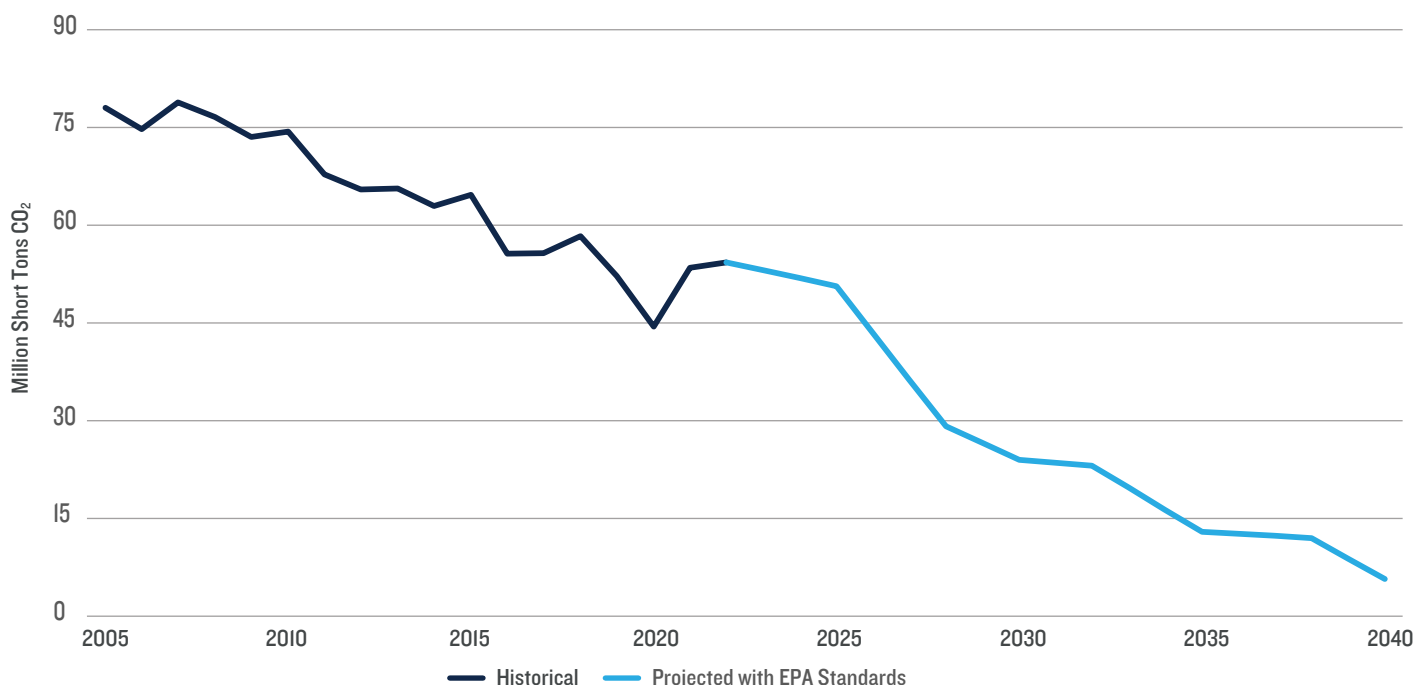


Figure 5: In-state Power Sector CO₂ Emissions



Note: Analysis does not include Michigan’s new clean energy standard (S.B. 271).

THE IRA AND EPA STANDARDS WILL REDUCE CARBON POLLUTION IN MICHIGAN

The retirement of coal plants and the growth in new renewable energy will lead to cleaner air, dramatically less carbon emissions, and better health for the people of Michigan. These benefits include:

- By 2030, the state’s carbon emissions from electricity generation are projected to be almost 70 percent below 2005 levels. By 2040, they will be down by *93 percent* (Figure 5).
- In total, the IRA climate law and EPA standards are projected to cut in-state power sector carbon pollution by 591 million tons, compared to today’s levels, between 2025 and 2040. This is more than *10 times* the annual pollution from the state’s current power fleet.

THE IRA AND EPA POLLUTION STANDARDS WILL IMPROVE HEALTH FOR ALL MICHIGANDERS

The transition to cleaner energy will also save lives, prevent illness, and reduce health spending across the state. Nitrogen oxide and sulfur dioxide are two major health-harming pollutants produced by fossil power plants; they contribute to local smog, particulate pollution, and ground-level ozone,

which can lead to serious respiratory illness, stroke, lung cancer, and death. These pollutants also contribute to acid rain that damages ecosystems, agricultural lands, buildings, and wildlife by acidifying surface water and soil.

The retirement of coal plants will result in the near total elimination of sulfur dioxide emissions from the state’s power fleet by the mid-2030s. Nitrogen oxide emissions will fall by nearly three-quarters from current levels in the same time frame. These reductions in health-harming pollution will result in significant economic public health benefits by reducing asthma, stroke, lung cancer, and premature death. In fact, it is estimated that the reduction in pollution from Michigan power plants could prevent more than 800 premature deaths in Michigan *annually* by 2030.¹²

CONCLUSION

With Michigan’s new clean energy legislation in place, it is clear the transition of the state’s power sector is underway. The closure of old, dirty fossil fuel plants and construction of new wind turbines is now set to usher in an age of energy abundance and economic growth for the state. Strong EPA standards on power plants will help ensure Michigan—and the entire nation—can benefit as we address the climate crisis and cut air pollution.

Endnotes

- 1 Clean Jobs Midwest, “Michigan Clean Energy & Transportation Jobs Are Growing,” accessed December 18, 2023, <https://www.cleanjobsmidwest.com/state/michigan>.
- 2 E2, “Mich. Passes Clean Energy Future Bills, Clean Energy Jobs Poised to Grow Substantially,” news release, November 3, 2023, <https://e2.org/releases/mi-passes-clean-energy-future-bills-clean-energy-jobs-poised-to-grow-substantially/>.
- 3 NRDC, “Michigan House Passes Clean Energy Future Bills, Putting the State on the Path to 100% Clean Energy,” news release, November 3, 2023, <https://www.nrdc.org/press-releases/michigan-house-passes-clean-energy-future-bills-putting-state-path-100-clean-energy>.
- 4 Analysis was completed using the Integrated Planning Model (IPM). This is the same model used by the U.S. EPA for its own analysis of the proposed carbon pollution standards for power plants. More details on our analysis of the IRA and power plant standards can be found in NRDC and Clean Air Task Force, *New Source Performance Standards for Greenhouse Gas Emissions From New, Modified, and Reconstructed Fossil Fuel-Fired Electric Generating Units; Emission Guidelines for Greenhouse Gas Emissions From Existing Fossil Fuel-Fired Electric Generating Units; and Repeal of the Affordable Clean Energy Rule*, August 8, 2023 (comments to the EPA, docket no. EPA-HQ-OAR-2023-0072), <https://www.nrdc.org/sites/default/files/2023-08/comments-epa-power-plant-rule-nrdc-caf-20230808.pdf>.
- 5 U.S. Energy Information Administration (EIA), “2022 Total Electric Industry – Sales” (table 2), in *Electric Sales, Revenue, Prices*, accessed November 15, 2023, https://www.eia.gov/electricity/sales_revenue_price/pdf/table_2.pdf.
- 6 Carol Thompson, “Michigan Panel Approves DTE Pact to Close, Covert Energy Plants Faster,” *Detroit News*, July 26, 2023, <https://www.detroitnews.com/story/news/local/michigan/2023/07/26/michigan-panel-approves-dte-pact-to-close-convert-energy-plants-faster/70471229007/>.
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- 8 Lazard, *Levelized Cost of Energy+*, April 12, 2023, <https://www.lazard.com/research-insights/2023-levelized-cost-of-energyplus/>.
- 9 EIA, “More Than Half of New U.S. Electric-Generating Capacity in 2023 Will Be Solar,” *Today in Energy*, February 6, 2023, <https://www.eia.gov/todayinenergy/detail.php?id=55419>.
- 10 EPA, “New Source Performance Standards for Greenhouse Gas Emissions From New, Modified, and Reconstructed Fossil Fuel-Fired Electric Generating Units; Emission Guidelines for Greenhouse Gas Emissions From Existing Fossil Fuel-Fired Electric Generating Units; and Repeal of the Affordable Clean Energy Rule,” *Federal Register* 88, no. 99 (May 23, 2023): 33240, 33269–33270 (quoting West Virginia, 142 S.Ct. at 2610, 2614), <https://www.govinfo.gov/content/pkg/FR-2023-05-23/pdf/2023-10141.pdf>.
- 11 *Ibid.*, 33243.
- 12 Calculated using EPA’s benefit-per-ton values. EPA, “Estimating the Benefit per Ton of Reducing Directly-Emitted PM2.5, PM2.5 Precursors and Ozone Precursors from 21 Sectors,” January 17, 2023, <https://www.epa.gov/benmap/estimating-benefit-ton-reducing-directly-emitted-pm25-pm25-precursors-and-ozone-precursors>.