FACT SHEET
EPA's Final Rule to Strengthen and Update the Mercury and Air Toxics Standards for Power Plants

SUMMARY OF ACTION

- On April 25, 2024 the Environmental Protection Agency (EPA) announced final requirements to strengthen and update the National Emission Standards for Hazardous Air Pollutants for Coal- and Oil-Fired Electric Utility Steam Generating Units (EGUs), commonly known as the Mercury and Air Toxics Standards (MATS) for power plants, based on an evaluation of the residual risk and technology review (RTR). The RTR reflects recent developments in control technologies and the performance of these plants.

- This final rule includes the most significant improvements and updates to MATS since EPA first issued these standards in February 2012.

- In the 2012 final MATS, the EPA established standards to limit emissions of mercury; acid gas hazardous air pollutants (HAP) such as hydrogen chloride (HCl) and hydrogen fluoride; non-mercury HAP metals such as nickel, lead, and chromium; and organic HAP such as formaldehyde and dioxins/furans from coal- and oil-fired power plants.

- Combined with other changes affecting the power sector, MATS has driven sharp reductions in harmful air toxic pollutants from coal- and oil-fired power plants. Industry-reported emissions data, required by MATS, shows 2021 mercury emissions from coal-fired EGUs were 90 percent lower than pre-MATS levels.[1] Since 2010, acid gas HAP emissions have been reduced by over 96 percent and emissions of the non-mercury metals – including nickel, arsenic, and lead – have been reduced by more than 81 percent.

- This final rule builds upon the highly successful and cost-effective health protections in MATS. Based on its latest assessment of available control technologies, EPA is further limiting the emission of non-mercury HAP metals from existing coal-fired power plants by significantly reducing the emission standard for filterable particulate matter (fPM), which is designed as a surrogate emission standard to control non-mercury HAP metals. EPA is finalizing a two-thirds reduction in the fPM standard. Also, EPA is finalizing the removal of the low-emitting EGU provisions for fPM and non-mercury HAP metals.

- EPA is also tightening the emission standard for mercury for existing lignite-fired power plants by 70 percent, to a level that is aligned with the mercury standard that other coal-fired power plants have been achieving under the current MATS.

[1] 2021 Power Sector Programs Progress Report; available at *https://www3.epa.gov/airmarkets/progress/reports/pdfs/2021_full_report.pdf* and in the rulemaking docket.

- EPA's final rule also strengthens emissions monitoring and compliance by requiring coal- and oil-fired EGUs to demonstrate compliance with the fPM surrogate emission standard for non-mercury HAP metals by using PM continuous emission monitoring systems (CEMS).
- PM CEMS provide regulators, the public, and facility owners and operators with cost-effective, accurate, and continuous emission measurements. This real-time, quality-assured feedback can lead to improved control device and power plant operation, which will reduce air pollutant emissions and exposure for local communities.
- In addition, EPA is revising the startup requirements in MATS to assure better emissions performance during startup.

TECHNOLOGY REVIEW

- EPA is strengthening some emission standards in MATS based on its determination that technologies and/or methods of operation are available to achieve additional HAP control from coal-fired EGUs at reasonable costs.
- EPA is setting a more stringent standard for emissions of fPM – which serves as a surrogate for the non-mercury HAP metals – from existing coal-fired EGUs. EPA is finalizing a change to the fPM emission standard from 0.030 pounds per million British thermal units of heat input (lb/MMBtu) to 0.010 lb/MMBtu.
    - Currently, 93% of coal-fired capacity without known retirement plans before the compliance period has already demonstrated an fPM emissions rate at or below 0.010 lb/MMBtu.
- EPA is also tightening the standard for emissions of mercury from lignite-fired EGUs.
    - EPA is requiring that lignite-fired EGUs meet the same mercury emission standard as EGUs firing other types of coal (*i.e.*, bituminous, subbituminous, and coal refuse), which is 1.2 pounds per trillion British thermal units of heat input (1.2 lb/TBtu) or an alternative output-based standard of 0.013 pounds per gigawatt-hour electric output. Lignite-fired EGUs were previously subject to a mercury emission standard of 4.0 lb/TBtu.
    - EPA's review of information on current mercury emission levels and controls for lignite-fired EGUs shows that lignite-fired EGUs can achieve the more stringent mercury emission rate using available control technologies and/or improved methods of operation at reasonable costs.
- As noted above, the final rule also requires that existing coal- and oil-fired EGUs utilize CEMS to demonstrate compliance with the fPM emission standard. EPA estimates that approximately two-thirds of the existing coal-fired generating fleet are not currently utilizing PM CEMS.

- Lastly, the final rule removes one of the two options for defining the startup period for MATS-affected EGUs, based on a determination that this option is not widely utilized or necessary and that removing it will better secure good emissions performance during startup periods.

RISK REVIEW

- The results of the 2020 RTR showed that emissions of HAP from coal- and oil-fired power plants have been reduced such that residual risk is at an acceptable level. EPA did not propose, and is not finalizing, any changes to the 2020 Residual Risk Review.

- Although EPA did not reopen the 2020 risk review, the finalized standards under this technology review would achieve reductions in HAP emissions from power plants and likely reduce HAP exposures to affected populations.

EMISSIONS CHANGES, BENEFITS AND COSTS

- EPA projects that the final MATS standards will result in the following emissions reductions in 2028:
    - **1,000 pounds** of mercury;
    - **770 tons** of fine particulate matter ($PM_{2.5}$)
    - **280 tons** of nitrogen oxides (NO_x)
    - **65,000 tons** of carbon dioxide (CO_2)
    - **At least 7 tons** of non-mercury HAP metals
- Reducing non-mercury HAP metals should reduce exposure to non-mercury metal HAP, including carcinogens such as nickel, arsenic, and hexavalent chromium, for residents living in the vicinity of these facilities.

- EPA prepared a Regulatory Impact Analysis in accordance with E.O. 12866 and 14904, the guidelines of OMB Circular A-4, and EPA's *Guidelines for Preparing Economic Analyses* (2014). The RIA analyzes the benefits and costs associated with the projected emissions reductions under the final requirements to inform EPA and the public about these projected impacts. The projected benefits and costs of the final rule are presented for the period from 2028 to 2037.
- Many of the benefits of this rule are not monetizable because, at this time, data limitations prevent EPA from assigning monetary value to reductions of HAP such as mercury, lead, arsenic, chromium, nickel, and cadmium.

- In addition, the benefits of the additional transparency provided by the requirement to use PM CEMS for communities that live near sources of HAP, and the assurance PM CEMS provide that the standards are being met on a continuous basis are not monetizable.

- **Present value:** The present value of monetized benefits and costs of this action are calculated over the 10-year period from 2028 to 2037. EPA projects $300 million in health benefits, $130 million in climate benefits, and compliance costs of $860 million.

- **Annual value:** EPA projects the estimated annualized value of benefits to be $33 million in health benefits, $14 million in climate benefits, and compliance costs of $96 million.

POWER SECTOR IMPACTS

- The power sector analysis supporting this action indicates that the final rule would result in relatively minor impacts on the power sector.
    - For example, EPA projects no significant change to retail electricity prices in the contiguous U.S., and no significant change to the delivered natural gas price is anticipated in response to the final rule.
    - In addition, EPA projects that no coal-fired capacity would retire under the final rule. Consistent with no change in projected retirements, the Agency does not project coal production for use in the power sector to change significantly by 2028, nor does the agency expect significant changes in coal prices.
    - EPA projects that the rule will not result in significant changes in energy generation or use of natural gas and coal as a result of the final rule.

BACKGROUND

- Power plants are among the largest domestic sources of emissions of mercury and other toxic air pollutants such as arsenic, chromium, cobalt, nickel, lead, hydrogen chloride, beryllium, and cadmium.
    - Exposure to these HAP, at certain levels and duration, is associated with a variety of adverse health effects, which may include irritation of the lung, skin, and mucus membranes; detrimental effects on the central nervous system; damage to the kidneys; alimentary effects such as nausea and vomiting; and cancer.
- In addition to mercury emission standards, MATS also has an HCl emission standard, which serves as a surrogate for all acid gas HAP; an emission standard for fPM, which serves as a surrogate for the non-mercury HAP metals; and work practice standards that require periodic combustion tune-ups to limit formation and emissions of organic HAP. Coal-fired EGUs with operational add-on flue gas desulfurization (FGD) technology (e.g., wet scrubber, spray dryer absorber, dry sorbent injection) and SO_2 CEMS can demonstrate compliance with an alternative SO_2 emission limit that serves as an alternative surrogate for the acid gas HAP.
- Section 112 of the Clean Air Act (CAA) requires EPA to regulate air toxics from listed categories of industrial facilities in two phases.
- The first phase is “technology-based,” where EPA develops standards for controlling the emissions of air toxics from sources in an industry group or “source category” under section 112(d) of the CAA. These maximum achievable control technology (MACT) standards are based on emissions levels that are already being achieved by the best-controlled and lower-emitting sources in an industry.

- Within 8 years of setting the MACT standards, section 112(f)(2) of the CAA directs EPA to assess the remaining health risks from each source category to determine whether the standards protect public health with an ample margin of safety and protect against adverse environmental effects. This second phase is a "risk-based" approach called residual risk. Here, EPA must determine whether more health-protective standards are necessary.

- Also, at least every 8 years after setting MACT standards, section 112(d)(6) of the CAA requires EPA to review and revise the standards, if necessary, to account for improvements in air pollution controls and/or prevention.

- This final action responds to President Biden's January 20, 2021 Executive Order 13990 "Protecting Human Health and the Environment and Restoring Science to Tackle the Climate Crisis."
- This Executive Order directed EPA to review and consider publishing a proposed action to suspend, revise, or rescind the May 22, 2020 final action known as the MATS Supplemental Finding, which included the MATS RTR.
- In February 2023, EPA revoked the 2020 finding that it was not appropriate and necessary to regulate coal- and oil-fired power plants under CAA section 112 based on a number of factors that EPA must consider under the Clean Air Act, including the significant emissions of HAPs from these plants, the harmful health impacts of this pollution on the public as a whole and on vulnerable communities and populations, and the availability of cost-effective controls to reduce these emissions.

- The Agency proposed changes to the 2020 MATS RTR on April 24, 2023, pursuant to a review of the 2020 technology review, and this action finalizes those changes.

FOR MORE INFORMATION

- Interested parties can download a copy of the final rule at: Mercury and Air Toxics Standards.