



Appropriate & Necessary Finding – Mercury & Air Toxics (MATS)

EPA is likely to soon issue a final rule withdrawing the “appropriate and necessary” finding that underpins the Mercury and Air Toxic Standards (MATS). EPA likely will leave MATS in place and determine that after analyzing remaining risks from power plant mercury and air toxics emissions, no further reductions are required. The most likely immediate consequence of EPA’s action is a lawsuit the coal industry brings to eliminate MATS given the withdrawal of the appropriate and necessary finding.

This page provides background on this action, offers key points to look for in the final rule, and links to more in-depth EELP analysis.

Recent Actions:

Feb. 7, 2019 EPA [proposes](#) to reconsider the appropriate and necessary finding.

- Proposes determination that it’s not appropriate to regulate based on [outdated projected costs, benefits, and impacts](#) of MATS from the 2011 Regulatory Impact Analysis
- Proposes withdrawal of appropriate and necessary finding (keystone finding compelling EPA to regulate) and retention of the pollution control standards (MATS)
- Requests comment on whether withdrawal of appropriate and necessary finding authorizes EPA to rescind the MATS pollution control requirements

April 9, 2020 EPA [relaxes standards](#) for certain power plants.

- Issues final rule adjusting emissions limits for power plants that burn eastern bituminous coal refuse (a form of coal mining waste)

April 9, 2020 The Science Advisory Board [critiques](#) EPA’s assessment of risks to human health from pollutants regulated by MATS.

April 16, 2020 Anticipated release of the withdrawal of the appropriate and necessary finding.

Key Aspects of the Final Rule and Analysis:

The rule will conclude that it’s not appropriate and necessary to regulate mercury and air toxics under section 112 of the Clean Air Act (CAA). This determination will be based on:

- **Misinterpretation of the Clean Air Act and a Supreme Court Decision:** EPA’s action rests on an interpretation of the CAA that incorrectly concludes Congress authorized EPA to reject regulating power plant mercury emissions even after EPA finds that those emissions threaten public health and the environment. The agency long ago made such a finding. In the final rule,



EPA likely will ignore Congress' intent and the CAA's text by determining that, despite its finding that toxic pollutants are emitted at levels harmful to public health, EPA can use cost-benefit analysis to determine that it not necessary and appropriate to regulate toxic air pollutants and thus remove the legal foundation for MATS. Neither the Clean Air Act nor the Supreme Court decision EPA cites permit that determination.

- **Outdated Science:** EPA likely will not update the science it relies on in comparing the costs and benefits of regulation and will instead continue to use its 2011 regulatory assessment. Experts note that [recent science demonstrates](#) the benefits of reducing mercury emissions are much larger than EPA estimated in 2011.
 - In addition, EPA's own Science Advisory Board (SAB) [issued a report](#) on April 9, 2020 urging the agency to conduct more research on mercury impacts before it finalizes the second part of this rule, the Residual Risk and Technology Review. From the SAB report:
 - "While the EPA assessment is conservative in the assumption of fish consumption by the subsistence fisher...this is only a small fraction of fish consumed in the United States. Much of the exposure to methylmercury comes from ocean fish which, are not included in EPA's estimate." (3)
 - "For this or any future regulation, the EPA should prepare a new exposure estimate that accounts for total exposure. Methylmercury exposure for local populations should consider both exposure from U.S. power plants as well as overall exposure, particularly from ocean fish. In addition, the EPA should consider accounting for the incremental exposure that this sector contributes to overall exposure for the entire population." (6)
- **Non-Standard Economics:** EPA likely will continue to down-weight the co-benefits of MATS, such as reductions in particulate matter and sulfur dioxide pollution. This [does not align with the economic mainstream](#) or White House guidance, which says EPA should consider the full suite of benefits from regulation. Changing how EPA interprets its mandate to consider the benefits of regulating power plant pollution (by down-weighting co-benefits) seems to be a primary purpose of this rulemaking.
 - In its report, the SAB noted the problem with EPA's exclusion of co-benefits in the agency's cost-benefit analysis: "EPA's benefit-cost analysis of the proposed action categorically excludes co-benefits. That departs from the Agency's long-standing practice and is contrary to both the Agency's guidance document on economic analysis (U.S. EPA 2014) and to the recommendations of the Office of Management and Budget (U.S. OMB 2003). As the Agency's guidance has been previously reviewed by the SAB, excluding co-benefits is a departure from the Board's recommended practice." (2)

Legal Implications of the Final Rule:

Withdrawing the "appropriate and necessary" finding will have the following legal impacts:



- **Inviting Litigation Challenging MATS:** EPA likely will leave MATS in place, but by removing the statutory foundation of those standards, EPA invites challenges by the coal industry to the current standards themselves. After the Obama EPA issued the supplemental appropriate and necessary finding in 2016, Murray Energy [challenged](#) the finding and the standards themselves in the DC Circuit.
- **Creating an Unlawful “Loophole” in the Clean Air Act:** The final rule will likely reflect a misinterpretation of the Supreme Court decision, [Michigan v. EPA](#). In that case, the Court concluded that EPA had to consider cost in determining whether it was appropriate to regulate hazardous air pollutant emissions from power plants. The Court did not tell EPA *how* to account for cost and steered well clear of interpreting CAA section 112 as authorizing EPA not to regulate mercury if the agency determined that mercury emissions remained at levels threatening to public health and the environment. The Trump EPA’s assertion or implication that the Court determined EPA was compelled to find that regulation was not necessary if it determines that costs outweigh benefits [illegally misreads section 112](#) and misreads the Michigan opinion.

Selected EELP Analysis of the Proposal:

- [How Statutory Interpretation of the Clean Air Act Serves the Trump Administration’s Deregulatory Agenda](#) (Feb. 14, 2020) (Third section)
- [Rolling Back the Mercury and Air Toxics Standards: Proposed Withdrawal of “Appropriate and Necessary”](#) (March 14, 2019)
- [CleanLaw Podcast with Joe Goffman and Kathy Fallon Lambert](#) (Mar. 7, 2019)
- [MATS, Cost-Benefit Analysis, and the Appropriate and Necessary Finding](#) (Dec. 21, 2018)

Timeline of Key Developments:

Feb. 16, 2012 EPA issues MATS [final rule](#).

- Finds that it’s “appropriate and necessary” to regulate hazardous air pollutants from power plants under Section 112 of the CAA
- Sets pollution control standards for hazardous air pollutants from power plants
- The [Regulatory Impact Analysis](#) (RIA) estimates that the rule will result in \$37 to \$90 billion in annual monetized benefits.

June 29, 2015 Supreme Court decides [Michigan v. EPA](#)

- Rules that EPA improperly failed to consider cost in making the MATS “appropriate and necessary” finding

Dec. 15, 2015 D.C. Circuit [remands](#) without vacatur.



- Remands to EPA consideration of costs in determining whether it's appropriate and necessary to regulate power plant emissions under Section 112

April 25, 2016 EPA issues [Supplemental Appropriate and Necessary Finding](#)

- Confirms that after considering costs it remains necessary to regulate power plant emissions under Section 112.

July 10, 2018 Utility Industry and other stakeholders [report to EPA](#) that industry has been in full compliance with MATS since April 2016

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April 9, 2020 Science Advisory Board [critiques](#) EPA's assessment of risks to human health from pollutants regulated by MATS.

MATS Legal Background:

Section 112 of the Clean Air Act and MATS

Section 112 of the Clean Air Act mandates that EPA set emissions control standards for a number of hazardous air pollutants listed in the CAA itself.

- Section 112(c) directs EPA to list source categories that emit significant levels of the listed hazardous air pollutants. EPA has included power plants on the 112(c) list.
- Section 112(d) mandates that EPA set pollution standards for source categories on the 112(c) list.
- Section 112(n)(1)(A), a separate provision unique to power plants, provides that EPA must issue hazardous air pollutant standards for power plants if it determines that it's "appropriate and necessary" to regulate those pollutants.
- Section 112(f) requires that EPA perform a risk and technology review, after control technology requirements are implemented for a source category.



EPA issued MATS under section 112(d) after making the appropriate and necessary determination under section 112(n)(1)(A). Pursuant to Section 112(f), if the agency determines that remaining emissions pose a residual cancer risk of more than 1-in-1-million and that additional reductions in hazardous air pollution can be achieved, EPA must issue a second, more stringent set of pollution control requirements.

New Jersey v. EPA, 517 F.3d 574 (D.C. Cir. 2008)

EPA placed power plants on the 112(c) list via its 2000 finding that it was appropriate and necessary to regulate power plant hazardous air pollutants. In 2005, the Bush EPA reversed course and found that it was not appropriate and necessary to regulate and also removed power plants from the section 112(c) list of source categories. In 2008, the D.C. Circuit held that once power plants were included on the section 112(c) list EPA could remove them only by making the delisting showings required by 112(c)(9), regardless of EPA's finding at the time that it was not appropriate and necessary to regulate power plant hazardous air pollutants.

MATS Background

Signed by EPA Administrator Lisa Jackson in December 2011, MATS required coal- and oil-fired power plants to reduce their emissions of mercury and a range of heavy metals and acid gases. As part of the rule, EPA reinstated the 2000 appropriate and necessary finding. When EPA issued the final rule, EPA projected that MATS would cut power plant mercury emissions by 90 percent, acid gases by 88 percent, and sulfur-dioxide emissions by 41 percent. The agency also projected that those pollution cuts would avoid thousands of premature deaths and prevent 100,000 heart and asthma attacks annually. While compliance with the rule would cost a little under \$10 billion annually, the human health value alone of the air quality improvements was projected to be \$37 billion to \$90 billion each year. By the spring of 2015, the majority of coal- and oil-fired power plants had met their MATS obligations, and the rest followed by the spring of 2016.

The Supreme Court: "Appropriate and Necessary" Includes Cost

In June 2015, while the Supreme Court rejected numerous challenges to MATS, it [ruled](#) that EPA erred by not taking account of cost in making its 2011 appropriate and necessary determination. The Court took no position on how EPA was to account for cost. In remanding the case to the D.C. Circuit Court of Appeals for further proceedings, the Court included no instructions on whether that circuit court should vacate the rule altogether. The D.C. Circuit declined to vacate MATS, leaving the pollution control standards and compliance schedule in effect, and sent the appropriate and necessary finding back to EPA for review consistent with the Supreme Court's opinion.

The Supplemental Appropriate and Necessary Finding

In April 2016 EPA issued a Supplemental Finding. After taking account of the cost of compliance with the MATS rule, it found no basis for altering the appropriate and necessary determination. The finding relied on two alternative analyses. EPA first assessed the \$9.8B cost of compliance with MATS as reasonable, noting that the utility industry's annual revenue ranged from \$277B to \$356B in the years since 2000; the cost of compliance thus represented 2.7% to 3.5% of the industry's annual revenues.



EPA also asserted that the *Michigan* ruling did not require a formal benefit-cost analysis, but nevertheless applied a benefit-cost analysis to provide an alternative basis for the appropriate and necessary finding. Since compliance with MATS had the effect of reducing not just mercury, acid gases, and other hazardous air pollutants but also pollutants like sulfur-dioxide and particulate matter, EPA included the full health benefits of reducing the entire suite of pollutants in its benefit calculations. The result: regulating hazardous air pollutants emitted by power plants would yield net benefits of between \$27B and \$80B and thus was “appropriate and necessary.”

Murray Energy v. EPA (USCA Case #16-1127)

The [Utility Air Regulatory Group](#) and [Murray Energy](#) challenged the supplemental finding in the D.C. Circuit (captioned *Murray Energy v. EPA*). EPA filed its brief defending the supplemental finding on January 19, 2017. The Trump EPA later asked the court to hold the case in abeyance pending its review of MATS the supplemental finding. The court [granted EPA’s motion](#) on April 27, 2017.

Estimated Benefits of MATS and Scientific Concerns:

- 2017 OMB [report to Congress](#):
 - Estimating MATS annual benefits ranging from \$28 billion to \$77 billion. Compared to cost of \$8.2 billion per year. (p. 10)
- April 2020 Science Magazine Article, [Deep flaws in mercury regulatory analysis](#) (J. Aldy et al.):
 - “The analysis disregards economically important but indirect public health benefits, or ‘co-benefits,’ in a manner inconsistent with economic fundamentals. It fails to account for recent science that identifies important sources of direct health benefits from the reduction of mercury emissions. And it ignores transformative changes in the structure and operations of the electricity sector over the past decade. These analytical shortcomings run counter to long-standing guidance for economic analysis from the U.S. Office of Management and Budget (OMB) and from the EPA itself. If finalized, the new rule will undermine continued implementation of MATS and set a concerning precedent for use of similarly inappropriate analyses in the evaluation of other regulations.” (summarizing the [External Environmental Economics Advisory Committee’s](#) report)
- 2019 [CleanLaw Discussion](#) with Kathy Fallon Lambert (referencing findings in [MercuryMatters 2018: A Science Brief for Journalists and Policymakers](#))
 - “In the context of MATS and this most recent action by EPA it was clear to us and looking at that proposal that it was based on 2011 science and that a lot has been learned since then that has not been integrated into EPA’s proposal. Importantly, the impacts of mercury are even greater than what was understood at the time, and then, therefore, the benefits of reducing mercury from power plants is even higher than was estimated in 2011 and as being applied today.”



- “One of the biggest items is how people are exposed to mercury, and in the [Regulatory Impact Analysis (RIA)] of 2011 it assumes that recreationally caught freshwater fish is the exposure pathway that's relevant for this cost-benefit analysis. Well, it turns out that about 80% of the mercury intake of US consumers comes from marine fish, not freshwater fish, so by not including that exposure pathway, that cost-benefit analysis leaves out a very large portion of the American public when considering what the benefits would be of reducing mercury. That alone is a very, very substantial gap in the 2011 RIA that's being used in this current proposal by the EPA.”
- “[And] another piece of this is that it turns out a lot has been learned about the source of that mercury. The initial focus on freshwater systems came in part from the belief at the time that mercury from US power plants, if it was to have an effect it would be probably in lakes and rivers. But that understanding has evolved. It was originally thought that most of the emissions from power plants would be globally distributed and that a small amount would deposit in the US and make its way into fresh waters and [freshwater] fish. [...] New research confirms the fact that that is, it is the case, that more mercury is in the form that deposits locally, and so, the estimates of the contribution of US sources to mercury in the fish we eat were low. If we were to use current science, we would see that the power plants have much stronger contribution to the mercury in the fish we eat than was estimated at the time, therefore, the benefits of reducing those emissions is much higher than estimated.”
- “[The] 2011 RIA, focuses on neurocognitive deficits alone. [...] The RIA looks at IQ detriment, so reduction in IQ in children who are highly exposed from maternal consumption of fish, presumably is the biggest input. But since then, the cardiovascular effects of mercury have become quite well understood. The risk of non-fatal heart attacks and fatal heart attacks is well described in the scientific literature now that most scientists would say those should be included in a cost-benefit analysis. In addition, when looking at IQ, they (EPA) focused only on lost earnings and the economics of reduced IQ go well beyond that. If you were to look at just IQ, even that number would probably be higher today than in 2011 considering effects on the healthcare industry, effects on lost earnings for sure, but also effects in the insurance agency.
- “There's a whole cascade of health effects of mercury that are also missing from EPA's current proposal.”

Additional EELP Resources:

- [CleanLaw Podcast with Joe Goffman and Laura Bloomer](#) (March 9, 2020) (Starting at Minute 28:30)
- [Preview: Mercury and Air Toxics Standards \(MATS\) – EPA Review](#) (Dec. 17, 2018)
- [Legal Analysis of MATS Rule and MATS Review Proposal](#) (Dec. 17, 2018)
- Regulatory Rollback Tracker: [Mercury and Air Toxics Standards](#)