

August 30, 2022

The Honorable Michael S. Regan
Administrator, U.S. EPA

Dear Administrator Regan:

First, I am writing to commend you for your Agency's recent actions to protect public health and environment from the dangers posed by PFAS (so-called "forever chemicals"). At your confirmation hearing, you promised that under your leadership, the EPA would be "driven by science and the rule of law". Your actions pertaining to PFAS are consistent with those worthy principles.

Second, I am writing to respectfully urge that you apply those same high standards to the Fine PM Rule that is currently under review by the White House Office of Management and Budget (OMB). Since its 2011 Report to Congress on the Benefits and Costs of the 1990 Clean Air Act Amendments, EPA has recognized that exposure to fine and ultrafine particulate matter and their associated toxics poses a disproportionate threat to public health and the environment.¹ According to EPA: "The strong body of scientific evidence shows that long- and short-term exposure to fine particles...can harm people's health, leading to heart attacks, asthma attacks, and premature death. Large segments of the U.S. population, including children, people with heart or lung conditions, and people of color, are at risk of health effects from PM_{2.5}."

In a 2008 letter to the Federal Highway Administration expressing concern over a proposed highway project, EPA wrote: "*Many studies have measured elevated concentrations of pollutants emitted directly by motor vehicles near large roadways. These elevated concentrations generally occur within approximately 200 meters of the road, although the distance may vary depending on traffic and environmental conditions. Pollutants measured with elevated concentrations include benzene, polycyclic aromatic hydrocarbons, carbon monoxide, nitrogen dioxide, black carbon, and coarse, fine, and ultrafine particles. For a thorough review of near-roadway monitoring studies, see Section 3.1.3 of EPA's "Regulatory Impact Analysis: Control of Hazardous Air Pollutants from Mobile Sources" (February 2007, <http://www.epa.gov/otaq/regs/toxics/fr-ria-sections.htm>).*

A large number of recent studies have examined the association between living near major roads and various adverse health endpoints. Several well-conducted epidemiologic studies have shown associations

¹ Full report available at <http://www.epa.gov/air/sect812/prospective2.html>.

*with cardiovascular effects, premature adult mortality, and adverse birth outcomes, including low birth weight and size. Traffic-related pollutants have been repeatedly associated with increased prevalence of asthma-related respiratory symptoms in children. Also, based on toxicological and occupational epidemiologic literature, several of the MSATs, including benzene, 1,3-butadiene, and diesel exhaust, are classified as known and likely human carcinogens. Thus, cancer risk, including childhood leukemia, is a potential concern in near roadway environments. For additional information on MSATs, please see EPA's MSAT website (<http://www.epa.gov/otaq/toxics.htm>)."*²

When it sent its report to Congress in 2011, EPA expected that by 2020, mobile sources' share of fine PM emissions would approach 90%. EPA also knew that gasoline aromatic compounds (e.g., benzene-toluene-ethyl benzene-xylene, or BTEX) are the major factor in these harmful emissions and that EPA's modeling tools vastly under-predict SOA formation as a result. EPA acknowledged that "there may be large benefits from SOA-related reductions that are not currently captured by the modeling system".³

Unfortunately, in the eleven years since promising Congress it would correct its atmospheric models, EPA has failed to do so. In fact, EPA has continued to rely upon its MOVES Model—which it admitted in a 2015 report was fatally flawed⁴—to justify its inexplicable refusal to reduce BTEX and MSATs, despite its nondiscretionary duty to do so as set forth in section 202(l). As the footnote explains, EPA has known for years that PAHs "weaponize" SOAs, enabling their long-range transport and transforming them into "persistent pollutants"—just like PFAS.

EPA's internal contradictions when it comes to its failures to control MSATs are too numerous to mention here. For example, in its 2007 PM Implementation Rule, EPA stated that "aromatic compounds such as toluene, xylene, and trimethyl benzene are considered to be the most significant anthropogenic SOA precursors and have been estimated to be responsible for 50 – 70 percent of total SOA in some airsheds".⁵ That

² Kathleen M. Goforth, U.S. EPA letter to Mr. Abdelmoez Abdalla, Federal Highway Administration, December 5, 2008.

³Ibid. pages 4-24-25 and Table 4-1.

⁴Richard W. Baldauf et al., "Ultrafine Particle Metrics and Research Considerations: Review of the 2015 UFP Workshop", International Journal of Environmental Research and Public Health (2016): 13(11): <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5129264/pdf/ijerph-13-01054.pdf>. EPA has acknowledged that the Pacific Northwest National Laboratories new science represented a breakthrough in the investigation of SOA properties, which "play an important role in air quality but for many years available atmospheric models were not able to predict SOA formation. The main issue was the fact that all models relied on the assumptions that SOA particles were well-mixed low viscosity solutions and maintained equilibrium with the gas-phase...Recent studies...have demonstrated that these assumptions were wrong and that SOA particles must be viscous semi-solid. These studies showed also that there is a synergetic effect between PAHs and SOA since PAHs trapped inside SOA particles slow down SOA evaporation and increase SOA yield and lifetime. This can explain the long-range transport of toxic compounds like PAHs and other persistent pollutants. In conclusion, a new SOA paradigm has been developed: particles are semi-solid, nearly non-volatile and trap organic material during formation. The particles are not in equilibrium with the gas phase."

⁵ Pages 72 Fed Reg 20592-93.

same year, EPA admitted in its 2007 Final MSAT Rule that “there may be compelling reasons to consider aromatics control in the future, especially regarding reduction in secondary PM_{2.5} emissions, to the extent that evidence supports a role for aromatics in secondary PM_{2.5} formation.”⁶

Fifteen years later, despite incontrovertible proof that the linkage between aromatics/BTEX and SOA formation is strong, EPA has refused to comply with the mandatory, technology-forcing Congressional requirement: EPA’s air toxic controls must “reflect the greatest degree of emission reduction achievable through the application of technology which will be available.”⁷

As you know, Administrator Regan, that technology is “available” today, and its widespread application would every year save consumers billions of dollars at the pump and the nation’s taxpayers hundreds of billions of dollars in avoided public health costs and imported oil expenditures. I was a part of the High Octane Low Carbon (HOLC) Alliance chaired by former Senate Majority Leader Tom Daschle, and participated in last year’s meetings with you and Acting Administrator Joe Goffman. We talked about the Alliance for Automotive Innovation’s (AAI) strong support for EPA action to encourage the use of HOLC Fuels in “new and existing vehicles...as soon as possible”.

“With nearly 290 million light-duty cars and trucks in the United States, nearly 99 percent of those vehicles operate on gasoline or diesel fuel. In addition, the average age of a vehicle in the U.S. is now roughly 12 years, which underscores that a large portion of the car parc will continue to rely upon liquid fuels for years to come.”⁸

We were extremely disappointed that there was no mention of this whatsoever in the recent GHG/Fuel Economy Rule, despite the urging of numerous stakeholders (see attached letter from 27 groups and correspondence from two of our CFDC advisory Committee Members) and detailed information provided via comments. However, with the next phase of auto emission standards being developed for the post 2026 period, the opportunity remains to achieve the emission and efficiency goals of the rule by reducing aromatics while increasing octane.

We also talked about the major and adverse health consequences if EPA failed to substantially reduce gasoline BTEX content—the rapid adoption of gasoline direct injection (GDI) engines is already dramatically increasing the most harmful SOA-bound PAH toxic emissions. A recent Reuters article reported that such emissions would increase in the U.S. by more than a “septillion” (24 zeros) particles over the next decade.

Fortunately, you have the authority to act immediately in a way that achieves multiple public policy goals and directives. There is no need for you to wait for Congressional action, since the statute is already on the books. Maximum Achievable Control

⁶ 2007 MSAT Rule, 72 Fed. Reg. at 8479.

⁷ CAA § 202(l)(2), 42 U.S.C. § 7521(l)(2).

⁸Alliance for Automotive Innovation letter to Senator Tom Daschle, June 11, 2011.

Technology (MACT) standards requires EPA to substitute ethanol's superior "clean octane" for gasoline BTEX's "dirty octane" to protect public health and the environment. In doing so you pave the way for an orderly transition from nationwide E10 to nationwide E30 HOLC Fuels, EPA would achieve several critically important objectives:

- 1) Substantially reduce fine and ultrafine particulates and their associated toxics;
- 2) Substantially reduce tailpipe carbon emissions (widespread use of E30 HOLC fuels would reduce transport sector carbon/black carbon emissions by at least as much as EPA's recent LDV GHG rule, within years rather than decades).
- 3) Consumers and taxpayers would save hundreds of billions by substantially reducing the use of imported oil and carcinogenic BTEX.
- 4) EPA would finally comply with several laws that have thus far defied solution, including the RFS, MSAT, and GHG – CAFE challenges, by relying upon natural marketplace forces as lower-cost, lower-carbon ethanol displaces higher-cost, carbon-intensive, and toxic BTEX.

What we've outlined here are plenty of "carrots"—positive reasons why EPA should want to utilize the Fine PM Rule to improve the nation's gasoline quality. We sincerely hope you share our belief that the "science and rule of law" couldn't be clearer. The recent Supreme Court ruling which elevated the Major Questions Doctrine should remove any room for doubt: when Congress enacted section 202(l) in the 1990 CAAA and reaffirmed it in the 2005 EPACT law (section 1504), it expected EPA to protect public health by substituting high-octane ethanol for "dirty octane" BTEX compounds. Congress put an exclamation point on its preference for higher ethanol blends when it enacted both RFS1 and RFS2.

GDI engines' exacerbation of SOA-bound PAH emissions makes the need for EPA enforcement especially urgent. EPA's "technology-forcing" strategies are desperately in need of realignment—as currently implemented, they are imposing a "double whammy" of public health and environmental damages, especially on our children and economically-disadvantaged communities.

By any metric, gasoline PAH emissions are as bad or worse than PFAS for public health and the environment. We respectfully urge you to apply your laudable standard to be "driven by the science and the rule of law" fairly and consistently. If you do, you will have our wholehearted support.

Respectfully,

Douglas A. Durante

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Attachments:

CFDC White Paper: *The Real Cost of Gasoline is to Our Health*

<https://cleanfuelsdc.org/2022/05/16/new-white-paper-says-the-real-cost-of-gasoline-is-to-our-health/>

Detchon-Modlin GHG Rule Comments

<https://cleanfuelsdc.org/wp-content/uploads/2021/09/RDRMCommentsEPA-HQ-OAR.pdf>

Twenty Seven Organization Letter Calling for Higher Octane :

<https://cleanfuelsdc.org/wp-content/uploads/2021/07/PresidentBidenLetterSAFE.pdf>