

July 5, 2023

Michael S. Regan
Administrator
U.S. Environmental Protection Agency
EPA Docket Center
Office of Air and Radiation
Mail Code 28221T
1200 Pennsylvania Ave NW
Washington, DC 20460

ATTN: Docket EPA-HQ-OAR-2022-0829

RE: Multi-Pollutant Emissions Standards for Model Years 2027 and Later Light-Duty and Medium-Duty Vehicles, Proposed Rule, 88 Fed. Reg. 29,184 (May 5, 2023)

Dear Administrator Regan,

North Dakota Farmers Union (NDFU) appreciates the opportunity to comment on the proposed Multi-Pollutant Emissions Standards for Model Years 2027 and Late Light-Duty and Medium-Duty Vehicles. NDFU is the largest general farm organization in the state, representing over 60,000 farm, ranch and member families. NDFU urges the Environmental Protection Agency (EPA) to take a more balanced, technology neutral approach that better reflects the benefits of biofuels to emissions reductions efforts.

Background

NDFU is a strong supporter of renewable fuels, which provide high octane fuels with lower greenhouse gas (GHG) emissions. Renewable fuels also provide a critical market for farmers' crops and create well-paying jobs in our rural communities. However, barriers to the growth in renewable fuels markets remain. We continue to urge EPA to support the use of mid-level ethanol blends that provide a significant cost-effective means of reducing GHG and other air pollutant emissions. Unfortunately, the proposed rule ignores those benefits.

The proposed standards for 2027 and later set very aggressive goals for reducing GHG and criteria emissions. Achieving these goals will require dramatic changes not only in vehicle design, but in the entire automotive supply chain. To achieve these goals with a heavy reliance on battery electric vehicles (BEVs) will require huge investments and rapid growth in many industries including the mining and processing of key minerals, the generation and distribution of electricity, and the recharging of electric vehicles.

We are concerned that a swift and dramatic shift to BEVs will be difficult to achieve. The obstacles include geopolitics, long lead times, significant capital investments, and lagging consumer acceptance. In a state like North Dakota where drivers face cold weather and long

driving distances, it is difficult to imagine a large portion of the population using BEVs in four years.

On the other hand, renewable fuels are already compatible with many vehicles on the road today and can offer immediate emissions benefits on a larger scale than relying solely on new vehicles to achieve EPA's targets. Recent reports show that Americans are keeping their vehicles longer than in prior years.¹ In the long-term, promoting multiple solutions, including renewable fuels offers solutions for customers who may not be well served by BEVs.

In order to foster a vibrant and competitive landscape where multiple solutions co-exist, EPA should set performance-based and technology-neutral emissions standards. Unfortunately, the proposed standard falls short of this ideal. We urge EPA to look beyond tailpipe emissions and use life cycle analysis for fair comparisons and a "level playing field."

Benefits of Renewable Fuels

NDFU continues to believe that high octanes fuels are the cheapest method for reducing GHG emissions. Improved engines and high octane fuels, specifically mid-level ethanol blends, are technologically feasible and economically reasonable means to achieve reduced GHG emissions. Increased ethanol volume increases the octane level of gasoline across grades. In addition to its higher octane level, ethanol also boosts engine efficiency.² Higher ethanol blends can increase fuel octane without expensive refinery upgrades.

Ethanol is substantially cleaner than petroleum-based octane additives. It reduces emissions of particulate matter and air toxics, such as benzene, toluene, and xylene. Ethanol further provides GHG emissions reductions, which is increasingly important as the carbon intensity of gasoline is *increasing* with greater use of unconventional fossil fuels. "Emissions from fossil fuel combustion comprise the vast majority of energy-related emissions," with an increase in emissions from the transportation sector largely attributed to increased vehicle miles travelled and motor gasoline consumption by light-duty vehicles.³ At the same time, energy use in ethanol production and lifecycle GHG emissions have decreased with changes in farming practices and higher yields. As EPA has found, the land use, land-use change, and forestry sector generated a net increase in carbon stocks.⁴

¹ Krisher, T. (2023, May 15). *Repelled by high car prices, Americans are holding on to their vehicles longer than ever*. Associated Press. Retrieved from <https://apnews.com/article/cars-older-record-age-prices-shortages-supply-6e3273208399803a402e707e1393475c>.

² Ricardo, Inc. (2016, September 20). *The draft technical assessment report: Implications for high octane, mid-level ethanol blends, Final report*. Prepared for Renewable Fuels Association. Retrieved from https://d35t1syewk4d42.cloudfront.net/file/1607/ATTACHMENT-A_Ricardo-TAR-Report-for-RFA_2016_09-20.pdf.

³ Environmental Protection Agency (2023). *Inventory of U.S. greenhouse gas emissions and sinks: 1990-2021*. U.S. Environmental Protection Agency, EPA 430-R-23-002. <https://www.epa.gov/system/files/documents/2023-04/US-GHG-Inventory-2023-Main-Text.pdf>.

⁴ *Id.*



Slow Turnover of the Vehicle Fleet

Sales of new vehicles displace a small fraction of the existing vehicle fleet each year. EPA estimates that 67% of new vehicles sales will be battery electric in 2032.⁵ Even if that growth is achieved, large numbers of new vehicles that burn liquid fuels will continue to be produced for many years, and those vehicles will remain on the road well into the future. The table below shows survival rates for cars and light trucks by vehicle age.⁶

Based on this data, 86% of passenger cars and 78% of light-duty trucks remain on the road for 10 years. Moreover, 16% of passenger cars and 32% of light-duty trucks remain on the road for 20 years. If new electric vehicles are more expensive or less attractive to consumers, it is reasonable to assume older liquid-fueled vehicles will remain on the road even longer.

Table 3.15
Survival Rates for Cars and Light Trucks by Vehicle Age

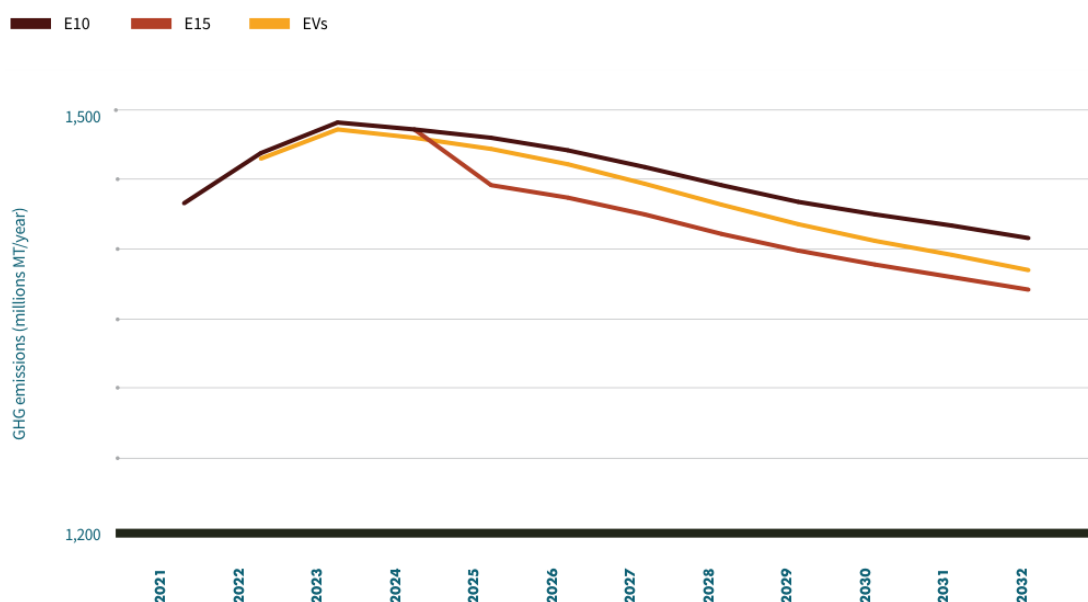
Vehicle age (years)	Estimated survival rate for cars	Estimated survival rate for light trucks
0	1.000	1.000
1	0.997	0.991
2	0.994	0.982
3	0.991	0.973
4	0.984	0.960
5	0.974	0.941
6	0.961	0.919
7	0.942	0.891
8	0.920	0.859
9	0.893	0.823
10	0.862	0.784
11	0.826	0.741
12	0.788	0.697
13	0.718	0.651
14	0.613	0.605
15	0.510	0.553
16	0.415	0.502
17	0.332	0.453
18	0.261	0.407
19	0.203	0.364
20	0.157	0.324
21	0.120	0.288
22	0.092	0.255
23	0.070	0.225
24	0.053	0.198
25	0.040	0.174
26	0.030	0.153
27	0.023	0.133
28	0.013	0.117
29	0.010	0.102
30	0.007	0.089
31	0.002	0.027

⁵ Environmental Protection Agency (2023, April 12). *Biden-Harris administration proposes strongest-ever pollution standards for cars and trucks to accelerate transition to a clean-transportation future* [Press Release]. Retrieved from <https://www.epa.gov/newsreleases/biden-harris-administration-proposes-strongest-ever-pollution-standards-cars-and-trucks>.

⁶ Davis, S. C., and Boundy, R. G. (2022, June). *Transportation energy data book: Edition 40*. Oak Ridge National Laboratory. Prepared for the U.S. Department of Energy. Retrieved from https://tedb.ornl.gov/wp-content/uploads/2022/03/TEDB_Ed_40.pdf.

Low-carbon liquid fuels can achieve GHG reductions faster than new vehicles can displace the existing fleet. As illustrated below, a relatively simple change such as replacing E10 (10% ethanol) with E15 (15% ethanol) can offer greater GHG reductions than the phase-in of BEVs,⁷ because it can immediately affect a huge fleet of vehicles that are already in use.

FIGURE 21. LIGHT- AND MEDIUM DUTY VEHICLE ANNUAL GHG EMISSIONS REDUCTION SCENARIO (2022-2032)



Source: Stillwater assessment using 2022 GREET and EIA AEO 2022 Reference Case

Ethanol can continue to significantly contribute to reductions in GHG emissions from the transportation sector. Argonne National Laboratory published a study finding that the carbon intensity of corn-based ethanol improved 23% from 2005 to 2019 and that “displacement of gasoline by corn ethanol on an energy equivalent basis from 2005 to 2019 has resulted in a cumulative GHG emissions reduction of 544 MMT CO₂e.”⁸ To enable further displacement of gasoline by ethanol, many stakeholders have agreed to support E25 capability in all vehicles by 2028, and E30 by 2033, as specified in the Next Generation Fuels Act.⁹ EPA need not wait for

⁷ Eichberger, J. (2023, June). *Decarbonizing combustion vehicles – A critical part in reducing transportation emissions*. Transportation Energy Institute. Retrieved from <https://www.transportationenergy.org/resources/blog-post/decarbonizing-combustion-vehicles-a-critical-part-in-reducing-transportation-emissions/>.

⁸ Lee, U., Kwon, H., Wu, M., and Wang, M. (2021, May 4). *Retrospective analysis of the U.S. corn ethanol industry for 2005-2019: implications for greenhouse gas emissions reductions*. Biofuels, Bioproducts and Biorefining. Retrieved from <https://onlinelibrary.wiley.com/doi/10.1002/bbb.2225>.

⁹ Grassley, C. (2023, March 22). *Grassley introduces bipartisan bill to improve vehicle efficiency and lower fuel costs*. [Press Release]. Retrieved from <https://www.grassley.senate.gov/news/news-releases/grassley-introduces-bipartisan-bill-to-improve-vehicle-efficiency-and-lower-fuel-costs>.

legislation, however. It can use existing authority to mandate or encourage the production of new vehicles with E25/E30 capability, as well as flex-fuel vehicles with E85 capability. Getting these vehicles on the road quickly will build the foundation for future increases in ethanol usage and dramatic GHG emissions reductions.

Unfortunately, the significant GHG benefits of ethanol and other low-carbon fuels are not accounted for in the proposed rulemaking. EPA should use life cycle analysis to properly account for and incentivize their use.

Regulatory Bias in Proposed Rule

EPA is proposing that upstream emissions accounting for BEVs as part of a manufacturer's compliance calculation, which under the current regulations would begin in MY 2027, be removed; "thus, BEVs would continue to be counted as zero grams per mile in a manufacturer's compliance calculation." This is not an appropriate approach for a performance-based or technology-neutral proposal, because it would disadvantage all other technologies, regardless of whether those technologies can reduce emissions at a lower cost and more quickly.

The proposed rulemaking would not allow other vehicle-fuel pathways to compete with BEVs. By regulating only tailpipe emissions, EPA would create artificial incentives for only BEVs. This could have disastrous effects on both the cost and the GHG emissions of future vehicles.

The proposal basically assumes that BEVs will be the dominant technology for future emissions reductions. But relying on a single technology is a risky strategy. Many factors could interfere with BEV production, including the supply and cost of critical minerals, lack of BEV recharging infrastructure, slow ramp-up of wind and solar power, poor customer acceptance, and more. EPA estimates that 67% of U.S. vehicle sales will be BEVs in 2032, but other projections are lower and the U.S. lags behind other countries that are not expected to reach similar levels of sales in that timeframe.¹⁰

EPA should not focus on one technology. While BEVs may be part of the solution, a balanced approach to emissions reductions using BEVs and other technologies is needed.¹¹ It is important that EPA utilize lifecycle analysis to create a level playing field that encourages speedy adoption of flex-fuel vehicles, hybrid electric vehicles, plug-in hybrid electric vehicles and other technologies, to achieve the most rapid, affordable, robust, and practical GHG emissions reductions in a wide range of vehicle segments, while satisfying diverse customer needs and preferences. Furthermore, EPA should revise the proposed standards to a level which can be achieved using more realistic estimates for future penetration of vehicle technologies and that incorporates low carbon fuels.

¹⁰ Stauffer, N. W. (2021, April 29). *China's transition to electric vehicles: By 2030 40 percent of vehicles sold in China will be electric; MIT research finds that despite benefits, the cost to consumers and to society will be substantial.* MIT News. Retrieved from <https://news.mit.edu/2021/chinas-transition-electric-vehicles-0429>.

¹¹ Pratt, G. (2021, August 23). *(More) straight talk about Toyota's electric vehicle strategy.* Medium. Retrieved from <https://medium.com/toyotaresearch/more-straight-talk-about-toyotas-electric-vehicle-strategy-f0aba4be40>.

Criteria Emissions

Further tightening criteria emissions standards on new vehicles may not be effective at improving air quality, and it also discourages technologies that can help meet GHG emissions reductions goals – and meet them today. For example, flexible fuel vehicles allow use of greater ethanol blends, which provide increasing GHG emissions reductions. However, overly restrictive criteria emissions standards make it more difficult to design engines, cold start strategies, and catalytic aftertreatment which can handle the wide range of fuel properties required for flex-fuel vehicles. Moreover, higher ethanol blends would reduce air toxic emissions that may be more important to focus on with respect to light-duty and medium-duty vehicles that will continue to use gasoline well into the future.

Fuel Effects on Particulate Emissions

EPA’s proposal requests “comment on potential future gasoline fuel property standards aimed at further reducing PM emissions, for consideration in a possible subsequent rulemaking.” A major advantage of supporting biofuels is that their use reduces emissions from all vehicles on the road today – not just new vehicles. Therefore, emissions benefits are achieved quickly on a larger scale.

Particulate emissions are a strong function of aromatic fuel components with a high double bond equivalent and low vapor pressure. PMI and particulate emissions can be reduced by altering refinery processes to reduce heavy aromatic content of the fuel. This may require other refinery changes in order to achieve fuel octane requirements, and the changes generally increase cost. Ethanol provides a more cost-effective option for boosting octane and reducing particulate matter emissions.¹² But the petroleum gasoline with which ethanol may be blended can impact the benefits of ethanol. As such, EPA should adopt rules to limit PMI of both finished fuels and the hydrocarbon blendstocks used for ethanol blends, including ensuring the ability to use mid-level ethanol blends. Limiting PMI of hydrocarbon blendstocks will ensure that the particulate emissions benefits of ethanol are not offset by negative changes at refineries.

Conclusion

Biofuels have an important role to play in supporting family farms and rural communities. Renewable fuels can also significantly contribute to EPA’s emissions reduction goals. However, we are concerned that EPA’s proposal is biased in favor of BEVs and against renewable fuels.

NDFU believes EPA should take into account lifecycle analysis to provide a fairer and neutral comparison of technologies available to reduce emissions, including consideration of biofuels. BEVs are not zero emissions in this context and would not necessarily provide the most cost-effective, practical or fastest way to achieve EPA’s emission reduction goals.

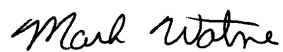
¹² Tang, T., et. al. (2023, October 15). *Expanding the ethanol blend wall in California: Emissions comparison between E10 and E15*. Fuel, Volume 350. Retrieved from <https://www.sciencedirect.com/science/article/abs/pii/S0016236123014497?via%3Dihub>.

We also urge EPA to take appropriate regulatory actions to promote higher blends of ethanol and support any legislative changes necessary to overcome limits to EPA's authority. These actions include ensuring that vehicles can use mid-level ethanol blend and revising the certification fuel as needed to do so. We believe this would also provide reduced emissions for particulate matter and air toxics, providing a truly multi-pollutant emissions reduction solutions.

Thank you for your consideration of these comments.

Sincerely,

NORTH DAKOTA FARMERS UNION

A handwritten signature in black ink that reads "Mark Watne". The signature is written in a cursive style with a fluid, connected script.

Mark Watne
President

