



August 14, 2020

Administrator Andrew Wheeler
Environmental Protection Agency
1200 Pennsylvania Ave. NW
Washington, DC 20460

RE: Docket ID EPA-HQ-OAR-2016-0604

Dear Administrator Wheeler:

On behalf of the National Corn Growers Association's (NCGA) 40,000 dues-paying corn farmers nationwide and the more than 300,000 corn growers who contribute to corn checkoff programs in their states, NCGA appreciates the opportunity to comment on the Environmental Protection Agency's (EPA) proposed Vehicle Test Procedure Adjustments for Tier 3 Certification Test Fuel.

As the producers of the primary feedstock for ethanol, corn farmers agreed with EPA's final Tier 3 rule, which updated the test fuel that vehicle manufacturers use to certify vehicles for federal emissions and fuel efficiency standards. The rule updated the test fuel from fuel with no ethanol to gasoline blended with 10 percent ethanol. E10, or fuel with 10 percent ethanol, has become standard in the gasoline marketplace, with clean octane from ethanol replacing hydrocarbon aromatics used at higher levels in the former E0 test fuel and also lowering greenhouse gas (GHG) emissions.

Lower GHG emissions from vehicles and improved fuel economy benefit consumers, our environment, and our energy security. Just as updating the test fuel from E0 to E10 reduced GHG emissions by blending cleaner, renewable ethanol with gasoline, E15 and future fuels that blend more ethanol will further reduce emissions and improve fuel economy when used with optimized engines. Vehicle test procedures for E10 certification fuel must not create impediments to low carbon fuels such as E15 and higher blends and the vehicle technologies that help reach our mutual goals of lower GHG emissions and improved fuel economy.

Our detailed comments follow, but in summary:

- NCGA believes actual tailpipe carbon emissions, regardless of the test fuel, must continue to be the only measure of vehicle emissions performance in vehicle testing. CO₂ test adjustments, such as those in the proposed rule, needlessly complicate vehicle test procedures now and in the future. Relying solely on test results eliminates uncertainty, averaging and potential for inaccuracies in procedures to adjust emission test results for the fuel.
- NCGA supports stringency in the GHG and Corporate Average Fuel Economy (CAFE) standards. Stringency is best maintained through the GHG and CAFE regulations and the Administrator's authority to adjust the stringency of the standards, not by adjusting emission test results.
- Separate from the change in certification fuel, NCGA has supported updating the R-factor in the fuel economy formula to better reflect modern engine technologies. While the proposed R_a factor of 0.81 is an improvement from the current 0.6 R-factor, we believe EPA should set this factor at or near 1.0. EPA's limited test process of only 11 vehicles is insufficient to determine a fleet-wide adjustment factor.

WWW.NCGA.COM

NATIONAL OFFICE
632 Cepi Drive
Chesterfield, MO 63005
(636) 733-9004

WASHINGTON, DC OFFICE
20 F Street NW, Suite 900
Washington, DC 20001
(202) 628-7001

CO₂ ADJUSTMENT FACTOR

In response to EPA's request for comments, NCGA urges EPA to require use of Tier 3 certification fuel without any test procedure adjustment for CO₂. NCGA believes EPA may finalize a change in the gasoline certification fuel without a CO₂ adjustment factor and without a Supplemental Notice of Proposed Rulemaking because EPA has requested comments on these questions. Finally, EPA should use the Administrator's authority in Section 202(a) of the Clean Air Act to adjust the stringency of the CAFE and GHG standards, rather than adjust test results. NCGA supports strong standards for vehicles.

Regulatory Approach

As EPA notes, the change from Tier 2 to Tier 3 certification test fuel reduces GHG emissions from vehicle tailpipes. The Clean Air Act requires EPA to regulate vehicle emissions with the objective of protecting public health and welfare. EPA estimates the change from Tier 2 to Tier 3 fuel results in a 1.6 percent reduction in CO₂ emissions, a positive public welfare benefit from the updated, market-representative Tier 3 fuel requirements. Therefore, actual CO₂ emissions from testing vehicles on Tier 3 fuel, the reduction of which improves public health and welfare compared to Tier 2 fuel, is the only appropriate measure of vehicle emissions testing.

In the proposed rule, EPA states the test procedure adjustment is based on a view of CAFE and GHG stringency as relating to vehicle efficiency rather than actual tailpipe emissions in a market representative fuel mix.¹ NCGA disagrees with the basis of EPA's approach. Stringency in GHG regulations is not relative to vehicle efficiency but is based on actual tailpipe emissions. EPA's vehicle test procedures must use only actual, measured tailpipe emissions to determine whether vehicle manufacturers meet the GHG standards.

EPA's view leads to the conclusion that the reduction in GHG emissions from using Tier 3 fuel reduces the stringency of the GHG standards, even though actual GHG emissions are lower due to use of Tier 3 fuel. If EPA believes the change in test fuel impacts the stringency of the standards, the Clean Air Act, Section 202(a), provides the Administrator with authority to change the stringency of the standards. NCGA strongly urges EPA to use this statutory authority to maintain stringency. Stringency should be maintained through the standards, rather than through the proposed approach of adjusting emission test outcomes to add more carbon to the test results when less carbon was emitted.

EPA's basis for this proposal - that standard stringency is relative to vehicle efficiency rather than actual emissions - erodes stringency and the capability of the current standards. EPA's approach also impacts the capability of future standards to drive innovation and reduce GHG emissions in a meaningful way. When measured emissions form the basis of EPA's test procedures, EPA maintains the most straightforward, transparent, and effective tool to hold vehicle manufacturers accountable for meeting current GHG standards and future standards that require greater GHG reductions.

Streamlined Testing Procedures

Supporting our view that EPA's regulatory approach should require use of Tier 3 certification fuel without test procedure adjustment for CO₂ is the fact that the proposed test procedure adjustment unnecessarily complicates and adds uncertainty to the testing process. The proposed 1.6 percent

¹ 85 Federal Register 28566

addition of carbon to the vehicle test results is based on narrow comparison of 11 vehicles tested on Tier 2 and Tier 3 test fuel. This pool of vehicles is very small compared to the number and variety of vehicles in the fleet that manufacturers test and certify for GHG emissions compliance. Relying solely on test results would eliminate the uncertainty, averaging and potential for inaccuracies in procedures to adjust emission test results for the fuel.

Impact for Future Certification Fuels

EPA is proposing to add carbon emissions to vehicle test results when less carbon was emitted from the vehicle tailpipe. This approach misrepresents emission test results. EPA should welcome the carbon emission reductions from the E10, Tier 3 certification fuel. Rather than penalizing lower carbon fuel through the proposed test procedure adjustment, EPA should support greater use of low-carbon fuels and consider how vehicles and fuels work as a system to reduce carbon and other tailpipe emissions. The proposed test procedure adjustment would set a poor precedent for future certification fuel changes, particularly certification fuels that provide greater carbon emission reductions.

For example, E15 has lower GHG emissions than E10 due to the additional ethanol content. With EPA's action in 2019 to determine E15 is substantially similar to E10 and remove regulatory barriers to E15, availability, sales and use of E15 are growing. Just like the fuel marketplace transitioned to E10 over time, E15 could become the standard fuel in the marketplace, requiring a future update to the certification fuel. Rather than supporting the carbon emission reduction offered by E15 fuel, the carbon penalty imposed by the proposed test procedure adjustment discourages progress toward lower carbon fuel.

Looking to new fuels, high-octane, mid-level ethanol blends would also reduce carbon emissions compared to Tier 3 certification fuel. Development and certification of vehicles designed to use these fuels would help automakers meet stricter CAFE and GHG standards while keeping vehicles and fuel affordable for consumers and offering more choice. The proposed test procedure adjustment, if applied going forward, would remove incentive for this cost-effective compliance pathway. The test procedure adjustment would erase the test fuels' lower measured carbon emissions, adding the eliminated carbon emissions back into the test results.

The carbon reduction benefit of higher ethanol blends is becoming greater as the carbon footprint of ethanol continues shrinking due to advances in both ethanol and corn production. A 2019 U.S. Department of Agriculture (USDA) study shows that ethanol currently results in 39 to 43 percent fewer GHG emissions than gasoline.² Building on this progress, additional improvements on farms and in ethanol production supported by expanding markets for low carbon fuels could result in ethanol with up to 70 percent fewer GHG emissions than gasoline, according to USDA's analysis.

The Department of Energy's Argonne National Laboratory GREET model analyzes lifecycle emissions of transportation fuels and is considered the "gold standard" in lifecycle analysis. Updated annually, GREET shows steady improvement in corn ethanol's lifecycle GHG profile, with corn-based ethanol's carbon intensity currently about 41 percent below that of baseline gasoline, following steady improvement since 2010 when GREET showed ethanol's carbon intensity about 19 percent below that of gasoline.

² Jan Lewandrowski, Jeffrey Rosenfeld, Diana Pape, Tommy Hendrickson, Kirsten Jaglo & Katrin Moffroid, "The Greenhouse Gas Benefits of Corn Ethanol - Assessing Recent Evidence," March 25, 2019.

EPA must consider how a carbon adjustment applied to today's Tier 3 fuel would impact future certification fuels such as E15 and mid-level ethanol blends and ensure vehicle test procedures do not disincentivize low carbon fuels. Test procedures that continue to rely on direct measurement of carbon emissions from the tailpipe could incentivize use of more low carbon fuels through use of engine technologies such as optimizing for high octane fuel or flex-fuel capability. With the ability for lower carbon fuels to further decarbonize the transportation sector, the proposed carbon adjustment would impede progress toward those fuels and the development and certification of vehicles that use them.

FUEL ECONOMY ADJUSTMENT FACTOR

As EPA notes in the proposed rule, CO₂ emissions are measured directly from the tailpipe for purposes of determining compliance with the GHG standards. Fuel economy compliance is measured indirectly, based on the measured GHG emissions. To derive fuel economy, EPA uses a formula that converts measured CO₂ emissions into the volume of gasoline used, incorporating properties of the gasoline such as its energy and carbon content. Complicating the fuel economy formula, the law requires test results used for CAFE compliance be consistent with results that would have been calculated in 1975, when the fuel economy requirements were first enacted. This same requirement does not apply to GHG emission compliance.

As test fuels have changed, EPA has updated fuel economy equations. However, prior to this proposal, EPA's most recent update was made in 1986 and applied to vehicles beginning in 1988. Since vehicle technologies have changed considerably since then, NCGA has advocated for updating the fuel economy formula to better reflect modern engine technologies, most recently in comments to the SAFE Vehicles rule. Specifically, NCGA has focused on the need to update the formula's R-factor. The intent of the R-factor, first introduced in 1986, was to adjust the fuel economy formula for heating value variation.

NCGA has previously asked EPA to update the R-factor from 0.6 to near or at 1.0 to reflect results of analysis by the Department of Energy and EPA using modern engines and to fulfill previous observations and commitments from EPA to address this issue, and we continue to support a factor of 1.0. Published studies have shown that R for modern vehicles should be around 0.93 to 0.96.³ Setting R to 1.0 would incentivize vehicle manufacturers to transition to the E10 test fuel sooner and encourage future certification fuels with higher blends such as E15 or E25, resulting in lower carbon emissions from vehicles.

EPA proposes to replace the R-factor with a new factor, R_a , to account for the change in fuel energy content and other impacts from the change in test fuel, such as the reduction in aromatics from Tier 2 to Tier 3 fuel, and proposes a R_a factor of 0.81 to serve as the CAFE fuel adjustment factor for testing on Tier 3 certification fuel. While NCGA has supported a higher R-factor, we believe the proposed R_a factor falls short of the update needed.

NCGA is concerned with the vehicle test process used to determine the proposed R_a . EPA relied on the same 11 vehicles tested for the proposed GHG adjustment, a sample of vehicles far too small to form the basis for this factor for the entire vehicle fleet. R is different for every engine, vehicle and driving

³ Sluder, C., West, B., Butler, A., Mitcham, A. et al. 2014. Determination of the R Factor for Fuel Economy Calculations Using Ethanol-Blended Fuels over Two Test Cycles. SAE Int. J. Fuels Lubr. 7(2):2014, doi:10.4271/2014-01-1572.

condition, and other DOE, EPA and published analysis on the R-factor relied on much more extensive vehicle testing. A limited test process of 11 vehicles is woefully insufficient to determine a fleet-wide adjustment factor. Furthermore, only one of the vehicles used in the limited test program was fully certified using Tier 3 standards, meaning the remainder were not Tier 3 certified vehicles. Determining an accurate Tier 3 R-factor requires a test program that uses Tier 3 vehicles and vehicles that represent new engine technologies expected to remain in use in coming years, such as gasoline direct injection and engine downsizing and boosting, due to their positive impact on fuel economy.

Benefits of R-factor of 1.0

Setting the R-factor to 1.0 sets fuel economy results on an energy basis. In application, the R factor equation is a “fuel response factor,” adjusting for more than just energy density. An R of 1.0 essentially converts fuel economy to mile per gallon gasoline equivalent (MPGge), which is how other alternative fuels such as propane, natural gas, and electricity have been compared to their gasoline counterparts for decades. Setting R to 1.0 provides equitable treatment to renewable ethanol that other alternative fuels already receive. This change could help speed the transition to certification with Tier 3 fuel as well as encourage vehicle manufacturers to seek certification for even higher ethanol blends, such as E15 or the high octane E30 EPA suggested in its Tier 3 proposal several years ago. Manufacturers are not incentivized to build dedicated high-octane vehicles, which offer cost-effective fuel economy improvements and lower GHG emissions, when those benefits are penalized by a low R factor.

An R factor of 1.0 in the fuel economy formula would support a lower-carbon fuel policy, providing automakers with greater options for choice and innovation in meeting more stringent CAFE and GHG standards through vehicle technologies and lower carbon fuels. Just like with the GHG standards and the proposed test procedure adjustment, EPA’s most effective tool for ensuring stringency in the CAFE standards comes through the standards themselves and the Administrator’s authority to increase the stringency of the standards.

CONCLUSION

To summarize our comments,

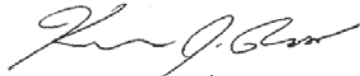
- NCGA believes actual tailpipe carbon emissions, regardless of the test fuel, must continue to be the only measure of vehicle emissions performance in vehicle testing.
- NCGA supports stringency in the GHG and Corporate Average Fuel Economy (CAFE) standards. Stringency is best maintained through the GHG and CAFE regulations and the Administrator’s authority to adjust the stringency of the standards, not by adjusting emission test results.
- While the proposed R_a factor of 0.81 is an improvement from the current 0.6 R-factor, we believe EPA should set this factor at or near 1.0 to support lower-carbon fuels and provide renewable ethanol equitable treatment compared with other alternative fuels and encourage lower carbon certification fuels.

Finally, NCGA notes that the challenges of determining a fleet-wide R-factor and the statutory requirement for fuel economy procedures to give comparable results to 1975 test results illustrate why EPA should avoid a new test procedure adjustment to GHG test procedures. EPA should continue to use

vehicle test procedures that use only actual, measured tailpipe emissions to determine whether vehicle manufacturers meet the GHG standards.

Thank you for considering NCGA's comments.

Sincerely,

A handwritten signature in black ink, appearing to read "Kevin J. Ross", written in a cursive style.

Kevin Ross, President
National Corn Growers Association