

Tier 2/Tier 3 Gasoline Certification Test Fuel Adjustments -- NPRM

Briefing for NACAA Mobile Source and
Fuels Committee

U.S. EPA - Office of Transportation and Air Quality
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Overview

- ▶ Background
- ▶ Purposes
- ▶ Implementation
- ▶ Rule Process

Background on Gasoline Certification Test Fuel

- In 2012, when EPA and NHTSA set the Model Year (MY) 2017-2025 CAFE and LD GHG standards, the gasoline certification fuel was the “Tier 2”, zero-ethanol (E0) gasoline
- In 2014, EPA’s Tier 3 Vehicle and Gasoline rule changed the certification test fuel while at the same time setting the Tier 3 vehicle criteria pollutant standards
 - The Tier 3 test fuel change addressed the major shift in market fuel since the 1980s, from E0 gasoline to near-universal E10 blends (+ other gasoline property changes)
 - Industry and EPA recognized that applying the new Tier 3 E10 fuel to testing for the GHG and CAFE standards could create a misalignment (stringency would change), but we did not have the data at the time to understand what the impacts would be
 - Therefore in the 2014 Tier 3 rule, EPA committed to a future rule to re-align by MY 2020 and later certification test results on the new Tier 3 fuel with the pre-existing GHG and CAFE standards
 - Stated our intention to initiate a separate action to identify and propose appropriate adjustments
 - Committed to the principle that adjustments due to the transition from the Tier 2 to Tier 3 certification fuel would not affect the stringency of the GHG and CAFE standards
 - Thus for several model years, some vehicles would need to be tested twice, once on Tier 3 gasoline for criteria pollutants, and once on Tier 2 gasoline for GHG & CAFE

Purposes of the NPRM

- The Notice of Proposed Rulemaking (NPRM) proposes test procedure adjustments that have three key purposes
 - 1) Return the industry to the historic approach of testing vehicles for criteria pollutants, GHG, and CAFE on a single certification fuel
 - Current two-fuel approach increases testing burden
 - 2) Ensure no change in stringency of CAFE or CO₂ standards due to the test fuel change
 - Implement small but important adjustments to CO₂ emissions test results and CAFE calculations, to align the earlier GHG and FE standards and testing going forward using the new E10 Tier 3 test fuel
 - We ask for comment on this question of stringency and its implications, but we propose to maintain stringency
 - 3) Prevent an unnecessary regulatory testing burden on the auto industry by allowing time for the GHG/CAFE transition to Tier 3 test fuel

- EPA's detailed, peer-reviewed test program demonstrates that without a test procedure adjustment, moving from Tier 2 E0 to Tier 3 E10 would result in:
 - GHG standards becoming **less stringent**
 - CAFE standards becoming **more stringent**

Phased Implementation

- ▶ Existing (2014) reg language requires all vehicle testing to be done on Tier 3 fuel beginning MY 2020
- ▶ Auto manufacturers told us that under the current regs, much testing data that they have from earlier MYs could not be “carried over,” as historically allowed, forcing re-testing of many FE test vehicles and stressing test facilities
- ▶ NPRM proposes a phased implementation, not requiring 100% testing to be done on Tier 3 fuel until after MY 2024

Rule Process from here...

- ▶ Federal Register notice published and docket opened on May 13, 2020; notice is available at this link:
 - ▶ <https://www.govinfo.gov/content/pkg/FR-2020-05-13/pdf/2020-07202.pdf>
- ▶ Comment period open through August 11, 2020
- ▶ A group of NGOs has requested a public hearing; we will announce a date shortly
- ▶ Final Rule target date not set, will depend on comments

Appendix

Overview of EPA's Test Program at Ann Arbor Lab

- ▶ Strategically selected 11 gasoline vehicles, focusing on vehicles with newer and advanced technologies
 - ▶ Tested each on both E0 Tier 2 and E10 Tier 3 certification gasoline
 - ▶ Went beyond conventional testing practices to minimize measurement variability, to discern subtle fuel-related changes in fuel economy and emissions
- ▶ Robust results allowed us to confidently quantify changes in CO₂ and FE between the two fuels
- ▶ EPA Test Program Report and Peer Review Report are available at <https://www.epa.gov/moves/tier-3-certification-fuel-impacts-test-program>

Test Vehicles and Associated Technologies

| Model Year | Vehicle Make/Model | Engine | Technologies |
|------------|--------------------------|-------------|---|
| 2014 | Ram 1500 | 3.6L V6 PFI | 8 speed automatic transmission, start-stop disabled |
| 2016 | Acura ILX | 2.4L I4 GDI | 8 speed DCT with a torque converter |
| 2013 | Nissan Altima | 2.5L I4 PFI | Continuously Variable Trans (CVT) |
| 2016 | Honda Civic | 1.5L I4 GDI | CVT, downsized turbocharged engine |
| 2015 | Ford F150 Eco-Boost | 2.7L V6 GDI | Downsized turbocharged engine, start-stop disabled |
| 2013 | Chevrolet Malibu | 2.4L I4 GDI | Gasoline direct injection |
| 2016 | Chevrolet Malibu | 1.5L I4 GDI | Downsized turbocharged engine |
| 2014 | Mazda 3 | 2.0L I4 GDI | High compression ratio engine |
| 2014 | Chevrolet Silverado 1500 | 4.3L V6 GDI | Cylinder deactivation |
| 2015 | Volvo S60 T5 | 2.0L I4 GDI | Downsized turbocharged engine |
| 2016 | Chevrolet Silverado 2500 | 6.0L V8 PFI | Class 2b truck |