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DEPARTMENT OF TRANSPORTATION

National Highway Traffic Safety Administration

49 CFR Part 575

[Docket No. NHTSA-2010-0036]

RIN 2127-AK45

Tire Fuel Efficiency Consumer Information Program

AGENCY: National Highway Traffic Safety Administration, Department of Transportation (NHTSA).

ACTION: Final rule.

SUMMARY: This document establishes the test procedures to be used by tire manufacturers in a new consumer information program to generate comparative performance information to inform consumers about the effect of their choices among replacement passenger car tires on fuel efficiency, safety, and durability. When this program is fully established, this information will be provided to consumers at the point of sale and online. This information will encourage the purchase of better performing replacement tires.

In order to provide this agency with time needed to conduct additional consumer testing and resolve important issues raised by public comments on the agency's proposal regarding the program, this rule does not specify how the information will be explained and provided to consumers. After a public meeting regarding the agency's draft plan for additional testing,

NHTSA will proceed with the testing and then develop and publish a new proposal for these aspects of the new program.

DATES: Today's final rule is effective [**Please insert the date 60 days after date of publication of this document in the Federal Register**]. The incorporation by reference of certain publications listed in the rule is approved by the Director of the Federal Register as of [**Please insert the date 60 days after date of publication of this document in the Federal Register**].

The various compliance dates for these regulations are set forth, as applicable, in § 575.106(e)(1)(iii).

Petitions for reconsideration must be received by [**Please insert the date 45 days after date of publication of this document in the Federal Register**].

ADDRESSES: Petitions for reconsideration must be submitted to: Administrator, National Highway Traffic Safety Administration, 1200 New Jersey Avenue, S.E., Washington, D.C. 20590.

FOR FURTHER INFORMATION, CONTACT:

For policy and technical issues: Ms. Mary Versailles, Office of Rulemaking, National Highway Traffic Safety Administration, 1200 New Jersey Avenue SE, Washington, DC 20590. Telephone: (202) 366-0846.

For legal issues: Ms. Sarah Alves, Office of the Chief Counsel, National Highway Traffic Safety Administration, 1200 New Jersey Avenue SE, Washington, DC 20590. Telephone: (202) 366-2992.

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I. Executive overview

A. Summary

This final rule is being issued pursuant to the Energy Independence and Security Act of 2007 (EISA),¹ which was enacted in December 2007. EISA includes a requirement that NHTSA develop a national tire fuel efficiency consumer information program to educate consumers about the effect of tires on automobile fuel efficiency, safety, and durability. Consumers currently have little, if any, convenient way of determining the effect of tire choices on fuel economy or the potential tradeoffs between tire fuel efficiency and tire safety and durability.

The collective effects of the choices consumers make when they buy tires are matters of public interest and concern. The 240 million passenger cars and light trucks in the United States consume about 135 billion gallons of motor fuel annually.² Finding ways to reduce this energy consumption is a national goal for reasons ranging from ensuring economic and national security to reducing greenhouse gas emissions and improving local air quality. Rolling resistance, or the force required to make the tires roll, differs from tire to tire and is a characteristic that indicates a tire's fuel efficiency. Consumers, if sufficiently informed and interested, could bring about a reduction in average rolling resistance of replacement tires by adjusting their tire purchases, and as a consequence, significantly reduce the amount of fuel consumed annually. While the handling, traction, and other operating characteristics of tires are of particular interest to people buying them to place on their own vehicles, they are also matters of even broader public interest as they may influence the safety performance of vehicles on the nation's highways.

Congress required NHTSA to establish a tire fuel efficiency consumer information program, including a replacement tire fuel efficiency rating system. To better inform consumers,

¹ Pub. L. 110-140, 121 Stat. 1492 (Dec. 18, 2007).

² Transportation Energy Data Book, Edition 27, Tables 4-1 and 4-2, available at <http://cta.ornl.gov/data/index.shtml> (last accessed Mar. 5, 2009).

EISA requires that NHTSA develop requirements for providing this information to consumers, and a national tire maintenance consumer education program. Consumers need to inflate and maintain their tires properly so that they can achieve their intended levels of efficiency, safety, wear, and operating performance. NHTSA has previously addressed the importance of proper tire inflation to safety and fuel efficiency in various public service campaigns. NHTSA has also mandated that tire pressure monitoring systems (TPMSs) be installed on new motor vehicles.³ However, TPMSs are not a substitute for proper tire maintenance. Motorists must be reminded of the fact that even small losses in inflation pressure can reduce tire treadwear life, fuel efficiency, and operating performance.⁴

The tire fuel efficiency consumer information program will require tire manufacturers to rate their replacement tires for fuel efficiency, safety, and durability based on test procedures specified in this final rule. These test procedures address three aspects of tire performance: rolling resistance, wet traction and treadwear life. As noted above and described in further detail below, rolling resistance is a measurement of fuel efficiency. A measurement of wet traction is intended to indicate a tire's ability to stop on wet pavement. Thus, wet traction is a metric that measures an aspect of safety. A treadwear rating measures a tire's wear rate compared with that of control tires. Treadwear life, therefore, is a measure of durability.

Comparing the three different ratings for different replacement tires will enable consumers to see how different replacement tires can affect the fuel economy they are getting from their vehicles. This will also enable consumers to see the tradeoffs they may be facing between fuel efficiency, safety (i.e., wet traction), and durability (i.e., treadwear life), and how

³ See Final Rule, Federal Motor Vehicle Safety Standards, Tire Pressure Monitoring Systems, Controls and Displays, 70 FR 18136 (April 8, 2005).

⁴ Transportation Research Board Special Report 286, Tires and Passenger Vehicle Fuel Economy, National Research Council of the National Academies, 5 (2006) (hereinafter "2006 NAS Report").

the balance of these factors may differ from tire to tire. Providing information regarding all three types of performance will help to ensure that no single aspect is given disproportionate attention. NHTSA's research found that while changing tire construction to improve fuel efficiency need not sacrifice wet traction or treadwear, maintaining the same wet traction performance and treadwear while increasing the fuel efficiency of a given tire often entails higher costs.⁵ Thus, if a manufacturer seeks to improve the fuel efficiency of a given replacement tire construction while keeping cost constant, there is a substantial chance that the construction will be changed in ways that sacrifice other factors.

In developing the rule, the agency conducted tire testing research to determine which test procedure would best standardize a fuel efficiency rating and provide accurate discrimination among replacement tires. The agency is specifying the test procedure by which NHTSA will evaluate the accuracy of the rolling resistance rating assigned by the tire manufacturer. For the safety and durability rating, this final rule specifies that the agency will use previously established test procedures for wet traction and treadwear to evaluate the accuracy of the safety and durability ratings assigned by the tire manufacturer, respectively.

NHTSA is not specifying the content or requirements of the consumer information and education portions of the program at this time. In light of the important objectives of this rulemaking, we are continuing to work to improve the content and format of the consumer information so that consumers will, in fact, be adequately informed. Specifically, NHTSA will be conducting additional consumer testing to explore how consumers will best comprehend information in each of the three categories discussed above. After additional consumer testing,

⁵ See National Highway Traffic Safety Administration, NHTSA Tire Rolling Resistance Rating System Test Development Project: Phase 2 – Effects of Tire Rolling Resistance Levels on Traction, Treadwear, and Vehicle Fuel Economy (February 2009). Docket No. NHTSA-2009-0121-0035.

NHTSA will publish a new proposal for the consumer information and consumer education portions of this new program.

Prompting NHTSA to pursue a deeper examination of consumers' comprehension of comparative tire information, several comments on the notice of proposed rulemaking (NPRM) suggested the agency consider additional indicators for the proposed label that would provide some understanding of what the ratings meant in terms of the choices available to a consumer. These suggestions included the use of an icon or mark on the labels to help consumers at a glance identify the most fuel efficient tire – an idea NHTSA had sought comment on in the NPRM – and suggestions that the ratings show high and low demarcations reflecting the range of ratings within the same size so that consumers and retailers would not become disenchanted with the system if they could not purchase or provide any top-rated tires in the size for the consumer's vehicle. Another commenter expressed concern with the idea of a mark for the best performers in the fuel efficiency rating category, as it could imply government endorsement and the commenter stated such endorsement should not be given unless it was to the safest tire.

These comments, as well as comments from other Federal agencies, have led NHTSA to recognize that a revised consumer research methodology could provide advanced understanding of how the presentation of relative rating information affects consumers' perceptions of the relevance of the information, and what motivates consumers to act in accordance with the information they have learned. Through additional consumer research, and a continued open dialog with interested stakeholders, NHTSA will consider how to best promote consumer understanding of the real-world benefits and possible tradeoffs involved in selecting tires at various points along relevant scales.

To further the development of the consumer information and consumer education portions of the tire fuel efficiency consumer information program, NHTSA recently announced that it will hold a public meeting on a new draft consumer research plan on Friday March 26, 2010 at the U.S. Department of Transportation Headquarters building.⁶ The agency has opened a new docket for the public meeting, Docket No. NHTSA-2010-0018, and on that docket interested members of the public can access the draft research plan, early agency consumer research, and any written comments submitted at the meeting or in response to the meeting notice. NHTSA will consider the public comments received in developing a research plan to aid in the development of consumer information requirements and NHTSA's consumer education plan regarding tire fuel efficiency. NHTSA will also continue to consider comments received on the NPRM relating to the consumer information and education portions of the tire fuel efficiency consumer information program. A continued open dialog will allow interested stakeholders to further explicate their ideas of what they believe should be included in a successful tire fuel efficiency consumer information program, and how this information can best be communicated. The new consumer research will further inform these concepts by indicating in what form consumers are most likely to understand information, and act in accordance with what they have learned.

In developing this final rule, the agency consulted with the U.S. Department of Energy (DOE) and the U.S. Environmental Protection Agency (EPA) on many issues. Since the NPRM, the agency has received nearly 600 pages of comments, which have been carefully reviewed and considered. When developing the supplemental NPRM for the consumer information requirements, NHTSA will continue to consider and evaluate comments received on the NPRM.

⁶ Notice of Public Meeting; Tire Fuel Efficiency, 75 FR 11806 (March 12, 2010), Docket No. NHTSA-2010-0018-0001.

NHTSA will also continue to consult with EPA, DOE, and other Federal agencies experienced with energy efficiency consumer information programs on the development of the tire fuel efficiency consumer information program.

NHTSA has also prepared a companion Final Regulatory Impact Analysis (FRIA) that provides an analysis on the potential economic impacts of this consumer information program, which is available in the docket for this final rule.

B. Energy Independence and Security Act of 2007

The provision of EISA that mandates the consumer tire information program built on a legislative proposal originally introduced in 2006 after a National Academy of Sciences (NAS) report was issued suggesting that a tire fuel efficiency consumer information program could increase vehicle fuel economy by an average of 1 to 2 percent.⁷ Many factors affect a vehicle's fuel economy, including its tires' rolling resistance, i.e., the force needed to make the tires roll. The 2006 NAS report estimated that 4 percent (urban) to 7 percent (highway) of the energy created by a vehicle's fuel usage is used to overcome the rolling resistance of the tires. Therefore, reducing rolling resistance can reduce a vehicle's fuel consumption. As one of many strategies to meet the federal corporate average fuel economy (CAFE) standards for new passenger cars and light trucks, automobile manufacturers often equip vehicles with low rolling resistance tires. However, consumers often unknowingly purchase higher rolling resistance tires when replacing their vehicle tires because information on the comparative rolling resistance of replacement tires and its impact on vehicle fuel economy is not readily available.

⁷ Previous attempts to establish a national tire fuel efficiency program can be found in proposed amendments to various energy bills in prior years. *See e.g.*, S. Amdt. 3083, 108th Cong., 150 Cong. Rec. S4710 (2004) (proposing to amend S. 150); S. Amdt. 1470, 108th Cong., 149 Cong. Rep. S10707 (2003) (proposing to amend S. 14). These amendments proposed regulating the fuel efficiency of tires in addition to a tire fuel efficiency grading system and consumer information program, and were not adopted.

One of the most significant of the EISA mandates is the setting of separate maximum feasible standards for passenger cars and for light trucks at levels sufficient to ensure that the average fuel economy of the combined fleet of all passenger cars and light trucks sold by all manufacturers in the U.S. in model year (MY) 2020 equals or exceeds 35 miles per gallon. Per the President's May 19, 2009 announcement, on September 28, 2009, NHTSA and the Environmental Protection Agency (EPA) issued a joint NPRM, with NHTSA proposing CAFE standards under the Energy Policy and Conservation Act (EPCA), as amended by EISA, and EPA proposing greenhouse gas emissions standards under the Clean Air Act.⁸ This joint proposal reflects a carefully coordinated and harmonized approach to implementing these two statutes. The new standards propose a significant increase in fuel economy by 2016. This consumer tire information program is one of the actions that will contribute towards the larger goals of energy independence and security. In comparison to CAFE standards, which apply to new vehicle fuel economy, this rule has goals of improving fuel economy for the existing fleet of vehicles, as replacement tires are purchased and installed.

Section 111 of EISA added section 32304A to Chapter 323 of title 49, United States Code. This chapter codifies consumer information requirements initially established by the Motor Vehicle Information and Cost Savings Act of 1972 (Pub. L. 92-513). The new section 32304A is titled "Consumer tire information" and specifies as follows:

- Within 24 months of the enactment of EISA, NHTSA is to promulgate rules establishing a national tire fuel efficiency consumer information program for replacement tires to educate consumers about the effect of tires on fuel efficiency, safety, and durability.

⁸ Proposed Rulemaking to Establish Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards, 74 FR 49454 (Sept. 28, 2009).

- The program must include a national tire fuel efficiency rating system for replacement tires to assist consumers in making more educated tire purchasing decisions.
- NHTSA must specify requirements for providing information to consumers, including information at the point of sale and other potential dissemination methods, including the internet.
- NHTSA must also specify the test methods that manufacturers are to use in assessing and rating tires to avoid variation among test equipment and manufacturers.
- As a part of the consumer information program, NHTSA must develop a national tire maintenance consumer education program, which must include information on tire inflation pressure, alignment, rotation, and treadwear to maximize fuel efficiency, safety and durability of replacement tires.

C. Summary of NPRM

1. Proposed test procedures

The NPRM proposed to require tire manufacturers to rate the fuel efficiency of their tires using a measurement obtained with a test procedure recently finalized by the International Organization for Standardization (ISO), ISO 28580:2009(E), Passenger car, truck and bus tyres – Methods of measuring rolling resistance – Single point test and correlation of measurement results (hereinafter referred to as ISO 28580).⁹ The choice of which test procedure to specify for measuring rolling resistance is important because measuring rolling resistance requires precise instrumentation, calibration, test conditions, and equipment alignment for repeatable results. As explained in detail in the NPRM, agency research shows that all of the available test procedures could meet these requirements. However, the ISO 28580 test method is unique in that it

⁹ See Notice of Proposed Rulemaking, Tire Fuel Efficiency Consumer Information Program, 74 FR 29542 (June 22, 2009); Docket No. NHTSA-2009-0121-0014 (hereinafter “Tire Fuel Efficiency NPRM”).

specifies a procedure to correlate results between laboratories and test equipment, which our research shows is a significant source of variation. Because other established test methods lack such a procedure, NHTSA would have to develop a new procedure to address this variation before any of those test methods could be considered. Further, the ISO 28580 test procedure is the specified test method in the proposed European Union Directive, allowing manufacturers to do one test to determine ratings for both proposed regulations.

As for the safety and durability ratings, due to the statutory timeline within which this rulemaking must be completed, NHTSA proposed to use traction and treadwear test procedures that are already specified under another tire rating system, the uniform tire quality grading standards (UTQGS).¹⁰

2. Proposed rolling resistance rating metric

The NPRM proposed to base a tire's fuel efficiency rating on rolling resistance force (RRF) as measured by the ISO 28580 test procedure. This is in contrast to basing a fuel efficiency rating on rolling resistance coefficient (RRC), or RRF divided by test load. The proposed European tire fuel efficiency rating system specifies tire ratings based on RRC. NHTSA proposed to base the rolling resistance rating on the RRF metric because such a rating translates more directly to the fuel required to move a tire, and based on the goals of EISA, appears to be a more appropriate metric.

3. Proposed label

To convey information to consumers, the NPRM proposed a label that contains an individual tire's ratings for fuel efficiency (i.e., rolling resistance), safety (i.e., wet traction), and durability (i.e., treadwear), and which was similar to a ratings label that tested well in consumer research conducted by NHTSA. Prior to the NPRM, NHTSA conducted focus group studies in

¹⁰ See 49 CFR § 575.104 (2008).

which it presented several labels using different graphics and scales to relay the ratings. The proposed label showed all the ratings on a scale of 0 to 100, with 100 being the best rating. Consumers expressed an understanding of this 0 to 100 scale, and reacted positively to red and green shading, with red indicating lower/worse ratings and green indicating higher/better ratings. Other graphics presented in NHTSA's consumer research were discussed in the NPRM.

4. Proposed information dissemination and reporting requirements for tire manufacturers and tire retailers

For tire manufacturers, NHTSA proposed that manufacturers be required to report various data to the agency. This is necessary both for enforcement of the rating system, and for development of NHTSA's tire fuel efficiency website, which will contain a database of tire information with a fuel savings estimator tool that allows easy comparison of fuel savings between various replacement tires. Regarding labeling, we proposed to require tire manufacturers to print the tire fuel efficiency graphic in color along with any other information manufacturers include on an existing paper label on the tire.¹¹

As for requirements for tire retailers, we proposed a requirement that the paper label containing the new rating information must remain on the tire until the sale of the tire. The label refers consumers to the agency's website for further information about the ratings. We also proposed a requirement that tire retailers must display a poster that NHTSA would print and distribute that would explain the rating system and encourage consumers to compare ratings across tires. Finally, for tire manufacturers and retailers that maintain a website, the agency proposed to require those websites to link to the comprehensive tire website we will be developing as part of the national tire maintenance consumer education program. The agency

¹¹ Manufacturers are required to print UTQGS information on a paper label pursuant to 49 CFR § 575.104(d)(1)(B). Many manufacturers include other information on this paper label as well. Note that NHTSA uses the term "paper label" in the colloquial sense; many labels on tires are actually made of plastic.

also sought comments on any other information dissemination requirements that would ensure that easy-to-understand information is conveyed in a way that is most likely to impact consumers' decisions and, thus, affect their behavior and save them and our nation fuel and money.

5. Uniform tire quality grading standards

In the NPRM, the agency considered the need and appropriateness of continuing the current UTQGS requirements. NHTSA explained that if the agency maintained the current safety and treadwear UTQGS ratings, there would be concerns about consumer confusion as well as unnecessary duplication. For this and other reasons explained in the NPRM, the agency tentatively concluded that the current UTQGS requirements should either be removed, once tires meet the new EISA requirements, or amended to conform to the approach in today's rule.

6. Proposed consumer education program

The NPRM identified and sought comment on various ways that NHTSA plans to implement a consumer education program to inform consumers about the effect of tire properties and tire maintenance on vehicle fuel efficiency, safety, and durability. Some of NHTSA's ideas for consumer education included informational posters or brochures that NHTSA would distribute at trade shows and other events, and which tire retailers could display at the point of sale and a centralized government website on tires containing a database of all tire rating information. NHTSA also announced that we are planning to develop a comparative fuel savings estimator that would show the amount of money a consumer would save annually or over the estimated lifetime of the tires of varying fuel efficiency ratings. Using the estimator, a consumer could select tires to compare, enter the fuel economy of their vehicle (miles per gallon or mpg) and the average number of miles they drive each year and even the dollar amount they

are paying for fuel and get a calculation of differences in fuel usage and/or money saved for the tires under comparison.

Finally, the NPRM announced plans to develop and form new partnerships to distribute educational messages about tire fuel efficiency and tire maintenance. NHTSA explained that we will seek to partner with any interested tire retailers, and state or local governments, as well as manufacturers who share NHTSA's goal of promoting the importance of proper tire maintenance. The NPRM also stated that we will seek to partner with universities, colleges and high schools that may wish to educate students regarding tire fuel efficiency or proper tire maintenance. These various innovative tools and education measures will assist consumers in making better-informed tire purchasing and maintenance decisions.

7. Benefits and costs

As explained in the NPRM, it is intended that the rule will have benefits in terms of fuel economy, safety, and durability. At the very least, the rule should enable consumers to make more informed decisions about these variables, thus increasing benefits of the factors that most matter to them. Because the agency could not foresee precisely how much the proposed consumer information program would affect consumer tire purchasing behavior and could not foresee the reduction in rolling resistance among improved tires, the Preliminary Regulatory Impact Analysis (PRIA) estimated benefits using a range of hypothetical assumptions regarding the extent to which the tire fuel efficiency consumer information program affects the replacement tire market. Specifically, the PRIA developed estimates assuming that between 2 percent and 10 percent of targeted tires are improved and that the average reduction in rolling resistance among improved tires is between 5 percent and 10 percent. Under these hypothetical assumptions, the PRIA estimated that the proposal would save 7.9 to 78 million gallons of fuel

and prevent the emission of between 76,000 and 757,000 metric tons of carbon dioxide (CO₂) annually. The values of the fuel savings were between \$22 and \$220 million at a 3 percent discount rate and between \$20 and \$203 million at a 7 percent discount rate.

The PRIA estimated the annual cost of NHTSA's proposal to be between \$18.9 and \$52.8 million. This included testing costs of \$22,500, reporting costs of around \$113,000, labeling costs of around \$9 million, costs to the Federal government of \$1.28 million, and costs of between \$8.4 and \$42 million to improve tires. In addition, NHTSA anticipated one-time costs of around \$4 million, including initial testing costs of \$3.7 million and reporting start-up costs of \$280,000.

8. Lead time

NHTSA proposed to require tire manufacturers to meet applicable requirements for all existing replacement tires within 12 months of the issuance of a final regulation. For new tires introduced after the effective date of this rule, NHTSA proposed to require reporting of information at least 30 days prior to introducing the tire for sale, as is currently required for UTQGS information.

Regarding the poster, in retailers that have a display room, the agency proposed to make this poster available within 12 months of the issuance of a final regulation. At that time NHTSA would publish a Federal Register notice announcing the availability of the poster. The agency proposed that a tire retailer must have the poster on display within 60 days of the issuance of the notice of availability in the Federal Register. We proposed that a tire retailer would be able to comply with the requirement of displaying the poster either by downloading and printing it, in color and with the specifications from NHTSA's website, or by contacting the agency and requesting that we send the retailer a copy of the poster. For tire retailers and tire manufacturers

with an internet presence, NHTSA proposed that those websites link to NHTSA's tire website within 12 months of the issuance of a final regulation.

D. Brief summary of public comments on the NPRM

Scope of the program: Some consumer and safety groups suggested that NHTSA require that tire manufacturers include the new tire ratings in advertisements for tires. Further, these groups, a tire manufacturer, and ExxonMobil Chemical Company (ExxonMobil) urged NHTSA to contemplate a standard for tire fuel efficiency performance. ExxonMobil also suggested that NHTSA establish a minimum inflation pressure retention loss rate for tires to minimize the air loss characteristics of tires. Various commenters sought confirmation of which entities would be considered tire manufacturers and tire retailers under the tire fuel efficiency consumer information program, as well as confirmation of the different tires types of tires that were not required to be rated under the program. Multiple commenters also asked whether tires that were not required to be included under the program could be voluntarily rated under the program.

Rolling resistance test procedure: Various commenters urged us to adopt the full ISO 28580 test procedure. MTS Systems Corp. (MTS), a test equipment manufacturer, suggested a different test method using a flat surface test machine rather than a road wheel. Several commenters also noted the need for NHTSA to specify a reference test machine since the ISO test procedure needs one for the alignment of results between different measurement machines, but the ISO has not yet designated one.

Rolling resistance rating metric: Tire Rack (an online tire retailer), Consumers Union (non-profit publisher of Consumer Reports magazine), and ExxonMobil expressed support for using RRF as the metric on which the agency should base the fuel efficiency rating. The tire manufacturers, a tire test equipment manufacturer, the European Commission, Japan Automobile

Tyre Manufacturers Association (JATMA), the Natural Resources Defense Council (NRDC, an environmental group), and General Motors (GM) commented that RRC would be a better metric for a fuel efficiency rating than RRF. These commenters argued that basing a fuel efficiency rating on RRC would spread out ratings for tires available to a single consumer so that the consumer would be able to get a top rated tire.

Safety: Advocates for Highway and Auto Safety (Advocates) supported the inclusion of tire safety information in the tire fuel efficiency consumer information program, and stated that the program should not promote cost savings at the expense of safety. JATMA supported the use of the current UTQGS traction grading test method as the basis for a safety rating for purposes of the tire fuel efficiency consumer information program. Tire Rack stated that NHTSA should base the safety rating on an average of the slide and peak coefficients of friction, the measurements of traction obtained via the traction test procedure. Consumers Union stated that the safety (wet traction) rating scale should be revised to define a span that is most appropriate to the level of performance commonly found in current replacement tires while still leaving room for future improvement. The Rubber Manufacturers Association (RMA, a tire industry trade association) argued that EISA did not give NHTSA the authority to establish a new rating system for consumer information on tire safety. RMA contended that the derivation of the safety rating formula from the wet traction test measurements was not explained well in the NPRM and that they were unable to comment on it.

Durability: Michelin North America (Michelin, a tire manufacturer) commented that NHTSA should specify changes to the UTQGS treadwear procedure to yield more truly representative wear results. Michelin also commented that the durability (treadwear) rating scale should be adjusted because the ratings of some current replacement tires would far exceed the

top rating on the scale. RMA argued that EISA did not give NHTSA the authority to establish a new rating system for consumer information on tire durability.

Overall rating: The tire manufacturers, MTS, Tire Rack, Advocates, and NRDC did not support an overall rating. Consumers Union, as well as other consumer and safety groups (Public Citizen et al.)¹² did support some form of an overall rating.

Label: NRDC, a private citizen, and Public Citizen et al. suggested the inclusion of a best-in-class (EnergyStar-type) endorsement for the most fuel efficient tires. Relatedly, to facilitate comparisons, Consumers Union and Tire Rack suggested the ratings show high and low demarcations reflecting the range of ratings for tires of the same size. Public Citizen et al. supported providing all the ratings on the same scale. Ford Motor Company (Ford) and Advocates suggested using the UTQGS scales for the traction and treadwear ratings, as opposed to the proposed 0-100 scale. Advocates expressed support for the green-red color coding, while Michelin stated that the transfer of information to consumers cannot be wholly dependent upon color. Tire manufacturers supported a five category tire efficiency rating system, as opposed to the proposed 0-100 rating scale. RMA argued that EISA does not give NHTSA authority to provide consumer information on a tire's greenhouse gas (GHG) emissions. Numerous commenters submitted suggestions about terminology on the label, the ordering of the rating scales, the required size of the tire label, additional disclaimers to place on the label, and alternate graphic icons for the rating scales. RMA and the European Commission opposed the inclusion of tire manufacture date on the tire label, an issue on which NHTSA sought comment in the NPRM, but did not propose regulatory language. Public Citizen et al. suggested that the tire identification number (TIN), which NHTSA's safety standards require be molded onto the

¹² Public Citizen, Center for Auto Safety, Consumer Federation of America, and Safe Climate Campaign submitted joint comments to the NPRM. *See* Docket No. NHTSA-2008-0121-0043.1. Throughout this notice, we will refer to these as Public Citizen et al. comments.

tire, be included on the paper label. Public Citizen et al., as well as the Tire Industry Association (TIA), expressed concern that the paper label may not provide consumers with information at a useful time in influencing purchasing decisions.

Information dissemination and reporting requirements--

- Tire manufacturer requirements: Tire manufacturers expressed support of the interpolation of test values for purposes of data reporting. Other commenters generally opposed the interpolation of test values. RMA opposed the proposed data reporting requirements. NRDC supported requiring manufacturers to report rolling resistance data. The International Council on Clean Transportation (ICCT) agreed with the proposal that manufacturers should be required to report which tires are exempted, and the basis for the exemption. Similarly, Michelin expressed support for requiring tire manufacturers to report which tires qualify for the low volume exemption and are not labeled.

- Tire retailer requirements: Consumers Union suggested that NHTSA provide further guidance on how best to ensure that consumers can see the educational poster at the point of sale. RMA suggested that instead of requiring the proposed ratings graphic appear on a tire label, NHTSA should require that the rating information be made available to consumers at the point of sale. TIA commented that NHTSA underestimates the importance of dialogue between sales associates and consumers at the point of sale, and suggested that sales associates should be trained to communicate the information provided in the new rating system. Similarly, Public Citizen et al., Ford, the National Automobile Dealers Association (NADA) and ICCT encouraged the adoption of additional requirements beyond requiring the retailer keep the label on the tire until it is sold, reasoning that relatively few consumers see tires before they buy them as there are limited number of tires on display in tire retailers.

Uniform tire quality grading standards: Tire manufacturers, Tire Rack, and Consumers Union expressed support for the idea of replacing the UTQGS requirements with the requirements created under the tire fuel efficiency consumer information program. These commenters cite the facts that this new rating system will be on a different scale and will be based on different test measurements than the UTQGS grading system, which may cause consumer confusion. Public Citizen et al. supported NHTSA's continuing to provide the temperature resistance rating along with the other UTQGS ratings, and stated that the temperature resistance rating should be incorporated into the new tire fuel efficiency consumer information program rating system.

Consumer education program: Numerous commenters suggested various messages that NHTSA should be communicating to promote the success of the consumer education program. Many commenters stated that much of the effectiveness of this rating system will depend on the success and reach of the consumer education program, informing consumers of the meaning of the new rating system and of the importance of proper tire inflation and maintenance.

Benefits and costs: NRDC and ICCT commented that our benefits are underestimated due to NHTSA's underestimation of the impact of reduced rolling resistance on fuel economy. RMA predicted higher testing, labeling, and tire improvement costs than NHTSA. RMA also commented that NHTSA overestimates benefits.

Lead time: Tire manufacturers, the European Commission, and JATMA requested more lead time than the twelve months NHTSA proposed in the NPRM.

Enforcement: ICCT and MTS commented that NHTSA should tighten the compliance tolerance bands that it gave in the NPRM, and emphasized that compliance tolerances are important because consumers should have confidence that the tires they are buying are

accurately labeled. RMA expressed support for requiring reported ratings must be less than or equal to the rating determined by the agency in compliance testing. RMA opposed the tolerance band concept for compliance. RMA also requested clarification of how NHTSA intends to apply the new civil penalties provision.

E. Final rule

The final rule adopts the test procedure provisions of the NPRM summarized above in section I.C, with the changes discussed below made in response to the public comments on the NPRM. This final rule also clarifies the scope of the tire fuel efficiency consumer information program, and responds to numerous comments on related issues.

As explained above, NHTSA is not specifying the content or requirements of the consumer information and education portions of the program at this time, but will be issuing a new proposal on these portions of the program after engaging in additional consumer research. NHTSA is also not finalizing information dissemination requirements for tire manufacturers or tire retailers in this final rule, as further consumer research may indicate how consumers best comprehend ratings and other consumer information. However, as discussed further below, this final rule does specify that NHTSA will require tire manufacturers to report ratings, but not test data, to the agency as part of the data reporting requirements of the tire fuel efficiency consumer information program.

1. Test procedures

EISA mandates that this rulemaking include “specifications for test methods for manufacturers to use in assessing and rating tires to avoid variation among test equipment and manufacturers.”¹³ As proposed in the NPRM, this final rule requires tire manufacturers to rate the fuel efficiency of their tires. To test for compliance with this requirement, NHTSA will use a

¹³ 49 U.S.C. § 32304A(a)(2)(C).

measurement obtained using the recently approved test procedure ISO 28580:2009(E), Passenger car, truck and bus tyres – Methods of measuring rolling resistance – Single point test and correlation of measurement results.¹⁴

As explained in detail in the NPRM, the ISO 28580 test method is unique in that it specifies a procedure to correlate results between different test equipment (i.e., different rolling resistance test machines). This is important because our research shows that machine-to-machine differences are a significant source of variation. As discussed below, the ISO has not yet completed all aspects of this procedure. NHTSA is nonetheless specifying the ISO 28580 test procedure in this final rule because EISA specifically directs the agency to avoid the type of significant variation that the ISO 28580 lab alignment procedure takes into account, but other established test methods do not. Further, the ISO 28580 test procedure is the specified test method in the European Union Directive and in the staff recommendations for a California regulation, allowing manufacturers to do one test to determine ratings for multiple regulations.

As commenters pointed out, under ISO 28580, use of the lab alignment procedure depends on the specification of a reference test machine against which all other labs will align their measurement results. Because the ISO has not yet specified a reference lab for the ISO 28580 test procedure, NHTSA must specify this laboratory for the purposes of implementing this rule so that tire manufacturers know the identity of the machine against which they may correlate

¹⁴ See http://www.iso.org/iso/iso_catalogue/catalogue_tc/catalogue_detail.htm?csnumber=44770 (last accessed Sept. 24, 2009).

their test results. In the near future, NHTSA will announce one or more private laboratories to operate the reference test machine(s) for the tire fuel efficiency consumer information program.¹⁵

Under the ISO 28580 lab alignment procedure, machine alignment is conducted using batches of alignment tires of two models with defined differences in rolling resistance that are certified on the reference test machine. ISO 28580 specifies requirements for these alignment tires (“Lab Alignment Tires” or LATs), but specific sizes or models of LATs are not specifically identified in ISO 28580. Therefore, NHTSA must also specify which LATs tire manufacturers should use to align other rolling resistance machines to the reference lab. Since specifications and source of supply for these LATs has not yet been finalized, NHTSA will postpone the specification of LATs to a later date. NHTSA will address available LAT options in the forthcoming supplemental NPRM relating to the consumer information requirements and consumer education portions of the program.

Because bias ply tires are included in the scope of the tire fuel efficiency consumer information program, NHTSA is also specifying a break-in procedure for bias ply tires, in order to warm up these types of tires up before ISO 28580 testing.¹⁶ This roadwheel break-in procedure that will be used for bias ply tires is adopted from already established Federal motor vehicle safety standards.

As for the safety and durability ratings, NHTSA is specifying the use of the test procedures that are already specified under the UTQGS. For the traction test, because we are

¹⁵ It is not the intent of NHTSA to unilaterally establish the reference machine for ISO or other global regions. Rather, the agency must define a “regional” reference machine for the tire fuel efficiency consumer information program that is independent of entities we regulate and is accessible to the agency by standard contractual mechanisms. This will allow reporting under the program and agency compliance testing that meet the requirements of EISA. It is our understanding that the output of a given “candidate” machine can be corrected using the appropriate correlation equations and, therefore, different entities/rating systems could also designate their own reference machines.

¹⁶ Bias ply tire design is an older internal construction tire design. Radial ply construction of tires has been the industry standard for the past 20 years, and the vast majority of passenger car tires on the market today are of radial construction.

requiring the collection of slightly different data than under the UTQGS traction test method, a one-time modification in the software used in the test equipment may be necessary. The agency will continue to examine other metrics to see if they could prove more effective in providing consumer information about safety and durability.

2. Rolling resistance rating metric

Based on the large number of comments received on this issue, and to retain flexibility to use what the agency learns about consumer comprehension from the future consumer research, NHTSA will defer a decision on which rolling resistance metric should be used for the fuel efficiency rating and consider that matter further in the future supplemental NPRM and final rule that will finalize the consumer information and education portions of the program.

3. Consumer information program requirements

NHTSA is not specifying the content or requirements of the consumer information program at this time. In light of the important objectives of this rulemaking, we are continuing to work to improve the content and format of the consumer information so that consumers will, in fact, be adequately informed. After additional consumer testing, NHTSA will publish a new proposal for the consumer information portion of this new program in a supplemental NPRM.

4. Information dissemination and reporting requirements for tire manufacturers and tire retailers

NHTSA is requiring that tire manufacturers report the three ratings for each tire to the agency. Unlike the proposed data reporting requirements, NHTSA is not requiring manufacturers to report test measurements. This is due to concerns that this information being public could cause competitive harm to tire manufacturers. Requiring the submission of such data would make public each manufacturer's statistical approach to risk in terms of how each

manufacturer is rating tires to prevent the possibility of non-compliance.¹⁷ NHTSA will also require tire manufacturers to report which tire models and sizes are excluded from the scope of this program, and thus not rated, because this information would be useful to consumers who wish to understand which tires are not rated and why. NHTSA will make this information available on its tire website. For manufacturers that are otherwise required to report ratings data, this information should be included with those data submissions. For manufacturers that only produce limited production tires, or other tires that are excluded from the applicability of today's program, these manufacturers must provide a one-time list of each one of its tire models/sizes, and a statement that every one of its tire models/sizes is excluded from the applicability of this regulation and, thus, is not rated. NHTSA will make this information on which tires are excluded from the new rating system available on its tire website.

Regarding labeling, as noted above, NHTSA is not specifying the content or requirements of the consumer information program at this time. In light of the important objectives of this rulemaking, we are continuing to work to improve the content and format of the label so that consumers will, in fact, be adequately informed. After additional consumer testing, NHTSA will publish a new proposal for the consumer information portion of this new program in a supplemental NPRM.

As for requirements for tire retailers, for similar reasons discussed above, in order to have the full benefit of any new understanding of how consumers best comprehend information gained from the agency's new consumer research, NHTSA will re-propose requirements for tire retailers in the supplemental NPRM on the consumer information and education portion of the tire fuel efficiency consumer information program.

¹⁷ Although NHTSA neither proposed to publish such data submitted to the agency, nor to post such data on the comprehensive tire website, such information in the possession of the agency would be subject to Freedom of Information Act requests and the agency does not believe it could deny such a request.

5. Uniform tire quality grading standards

NHTSA is retaining the UTQGS requirements at this time, including the UTQGS treadwear, traction, and temperature resistance ratings. However, if a future final rule finalizes that ratings under the tire fuel efficiency consumer information program must be printed on a paper label on each passenger car replacement tire, NHTSA will consider removing the UTQGS requirement of molding UTQGS ratings onto tires, and the UTQGS requirement of printing UTQGS information on the paper tire label when a tire is labeled in accordance with the tire fuel efficiency consumer information program requirements. The requirements to report UTQGS grading information to NHTSA would remain. As such, the UTQGS ratings would still be available to interested consumers, vehicle manufacturers, and tire retailers, but a consumer looking at a tire would not be confronted with different and confusing rating scales. NHTSA wants to study further the likely consequences of discontinuing the temperature resistance rating before making a decision about the future UTQGS requirements. NHTSA is making no changes to UTQGS requirements in this final rule.

6. Consumer education program

For similar reasons discussed above, in order to have the full benefit of any new understanding of how consumers best comprehend information gained from the agency's new consumer research, NHTSA will re-propose its ideas for the consumer education portion of the program in the supplemental NPRM on the consumer information and education portions of the tire fuel efficiency consumer information program. The supplemental NPRM will newly propose and seek comment on numerous ways that NHTSA could implement a consumer education program to inform consumers about the effect of tire properties and tire maintenance on vehicle fuel efficiency, safety, and durability. The supplemental NPRM will also discuss

some of the messages that NHTSA believes will be key to a successful tire fuel efficiency consumer information program.

Within the next year, NHTSA will begin developing a new government website on tires, which will be linked directly from <http://www.safercar.gov/>. It will contain all the information on NHTSA's current tire website (also located within www.safercar.gov), as well as links to other useful websites that contain educational information about tire maintenance.¹⁸ In furtherance of the objectives of consumer education program, the supplemental NPRM will seek comment on the structure and content of the tire website. NHTSA's tire website will eventually contain a database of all tire rating information.

7. Benefits and costs

It is hoped that the final rule will have benefits in terms of fuel economy, safety, and durability. At the very least, the final rule should enable consumers to make more informed decisions about these variables, thus increasing benefits in ways that most matter to them. It is possible that the rule will help promote innovation that will provide benefits to consumers in all three areas of tire performance. Because the agency cannot foresee precisely how much today's consumer information program will affect consumer tire purchasing behavior and cannot foresee the reduction in rolling resistance among improved tires (we estimate the potential range of rolling resistance improvement to be between 5 and 10 percent), the FRIA estimates benefits using a range of hypothetical assumptions regarding the extent to which the tire fuel efficiency consumer information program affects the replacement tire market. For example, if we assume that 1 percent of targeted tires (1.4 million tires) are improved and that the average reduction in

¹⁸ NHTSA's current online tire information can be found at <http://www.nhtsa.gov/portal/site/nhtsa/menuitem.c6b5d461a04337a1ba7d9d1046108a0c/> and <http://www.safercar.gov/portal/site/safercar/menuitem.13dd5c887c7e1358fefe0a2f35a67789/?vgnextoid=0e0aaa8c16e35110VgnVCM1000002fd17898RCRD> (last accessed Sept. 24, 2009).

rolling resistance is 5 percent, then under these hypothetical assumptions, the proposal is estimated to save 3 million gallons of fuel and prevent the emission of 29,000 metric tons of CO₂ annually. The value of these savings is \$11.6 million at a 3 percent discount rate.

If 1 percent of targeted tires are improved at an average cost of \$3 per tire, the annual cost of NHTSA’s final rule is estimated to be \$9.4 million. This includes annual testing costs of \$3.8 million, annual reporting costs of around \$113,000, annual costs to the Federal government of \$1.3 million, and annual costs of \$4.23 million to improve tires. This does not include annual costs for labeling. Since this final rule does not require a label, NHTSA will account for costs of a label when the requirement is re-proposed in the supplementary NPRM addressing consumer information requirements. In the first year, NHTSA anticipates one-time costs of \$34.8 million, including the same costs noted above except changes in initial testing costs of \$33.1 million, no one-time costs to improve tires (NHTSA only assumes this as a subsequent annual cost, not an initial cost), and reporting start-up costs of almost \$400,000.

Table 1 shows cost and benefit estimates developed to date, which may change based on further study on the design of the consumer information requirements. The assumptions are that silica technology is used at a cost of \$3 per tire, that this technology improves rolling resistance and has no or slightly favorable impacts on wet traction and treadwear. The estimates below assume that 1 percent of targeted tires are sold with improved rolling resistance.

Table 1. Total Benefits and Costs Estimates (in millions of dollars)

	3 Percent Discount Rate		7 Percent Discount Rate	
	5%	10%	5%	10%
Fuel Efficiency Improvement				
Costs (first year)	\$34.8	\$34.8	\$34.8	\$34.8
Costs (annual)	\$9.4	\$9.4	\$9.4	\$9.4
Benefits ^a	\$11.6	\$23.2	\$10.6	\$21.2
Annual Net	\$2.2	\$13.8	\$1.2	\$11.8

Benefits (Costs) ^b				
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^a Average annual benefit through 2050.

^b Counting only annual costs in the future; assuming 1% of replacement tires are sold with improved fuel efficiency.

8. Lead time

Lead time will be determined based on the timing of the final rules that will specify the requirements and content of the consumer information and the specification of a reference laboratory or laboratories. If the later of the final rules is the one in which NHTSA announces the selection of a reference laboratory or laboratories with the capability to test LATs, NHTSA will require tire manufacturers to meet applicable requirements for replacement tires they manufacture in stages, by tire size. In that case, tire manufacturers must meet applicable requirements for 15 and 16-inch tires, the most popular rim sizes,¹⁹ first; tire manufacturers must meet applicable requirements for other passenger car tire sizes at a later date. That phase in would be tied to the publication of a final rule specifying the availability of certified LATs from the reference laboratory or laboratories. As noted above, in the near future NHTSA will announce one or more private laboratories to operate the reference test machine(s). The agency is working expeditiously to establish and implement procedures for the selection of a reference laboratory or laboratories. Soon after, NHTSA will publish a Federal Register notice of the readiness of the reference laboratory or laboratories to provide LATs under ISO 28580.

If the final rule specifying the requirements and content of the consumer information portion of the program occurs after the final rule specifying the reference laboratory or laboratories, NHTSA may establish a lead time different from the phase in described above since

¹⁹ The *RMA Preliminary 2010 Factbook* estimated that 15 and 16-inch passenger replacement tires constituted about 22% of the replacement passenger tire sales in the U.S. in 2009. See Rubber Manufacturers Association, *Tire Industry Factbook*, available at http://www.rma.org/rma_resources/market_information/tire_industry/ (last accessed March 11, 2010).

tire manufacturers will have had since the final rule specifying the reference laboratory or laboratories to begin testing to the test procedures specified in this final rule.

In that case, NHTSA would also announce in the final rule specifying the requirements and content of the consumer information and consumer education portion of the program the first date by which tire manufacturers must submit required data to NHTSA on replacement tires, and the compliance dates for any other tire manufacturer or tire retailer requirements established in that rulemaking. For new tires introduced after those compliance dates, NHTSA is requiring reporting of information at least 30 days prior to introducing the tire for sale, as is currently required for UTQGS information.

The lead time is longer than the 12 months proposed in the NPRM for several reasons. First, as commenters correctly pointed out, tire manufacturers will need some additional time to validate correlation equations between ISO 28580 and other rolling resistance test methods many manufacturers presently use if they are using laboratories other than Smithers Scientific Services, Inc. (Smithers) and Standards Testing Laboratories (STL).

Second, because the safety rating test requires recording of the peak coefficients of friction, it is unlikely that manufacturers have established much (if any) correlation of their peak traction measurements to the peak values at NHTSA's San Angelo test facility. Therefore, it will likely take tire manufacturers more than a year to test enough tires to establish a correlation for all of their tire sizes to include estimated values in the reporting formula.

Finally, manufacturers cannot start rating for fuel efficiency until they can obtain certified reference tires from a reference lab so that they can use the ISO 28580 lab alignment procedure. NHTSA has determined that upon the availability of certified LATs, manufacturers will be able to accurately rate all tires within 24 months. However, recognizing that the

deadlines imposed by EISA indicate a desire to have information available to consumers as quickly as possible, NHTSA would phase in the availability of this consumer information. Because tires with 15 and 16 inch rim sizes make up more than 22 percent of sales in the replacement passenger car tire market, NHTSA believes there will be a significant benefit for requiring these most popular tire sizes to be rated as soon as possible. Recognizing the uncertainty of the rulemaking timeline for finalizing the requirements and content of the consumer information and consumer education portions of the tire fuel efficiency program, NHTSA will tie all compliance dates to the latter of the consumer information and education final rule, or the final rule announcing the availability of the reference laboratory or laboratories to test LATs under ISO 28580.

II. Background²⁰

A. Contribution of tire maintenance and tire fuel efficiency to addressing energy independence and security

1. Tire fuel efficiency and rolling resistance

Without the continual addition of energy, a vehicle will slow down. This effect is due to many forces, including aerodynamic drag, driveline losses, brake drag, and tire rolling resistance. The first three of these are vehicle properties; they will not be discussed further. The fourth, rolling resistance, is the effort required to keep a given tire rolling. That is, rolling resistance is the energy loss during the continuation of rotational movement of the tire. As such, it always opposes the vehicle's longitudinal, or forward/backward, movement. Since this rolling resistance force (RRF) opposes the direction of travel of the rotating tire, it directly reduces the

²⁰ This discussion is substantially the same as the Background discussion in the NPRM, but is repeated here to provide context for this new regulatory program and for the convenience of the reader. Comments on EISA section 111's preemption provision are discussed in this section. Discussions of the European Union's efforts towards increasing on-road fuel economy by reducing average rolling resistance is also updated. *See* Tire Fuel Efficiency NPRM, *supra* note 9, at 29547-29552.

efficiency of a vehicle in converting the chemical energy in the fuel to motion of the vehicle.

Therefore, tire rolling resistance is the most effective metric for rating the “fuel efficiency” of a tire.

In general, vehicle efficiency affects the conversion of chemical energy in motor fuel into mechanical energy and the transmission of energy to the axles to drive the wheels. Figure 1 illustrates the energy uses and losses for a midsize passenger car. Part of the energy supplied to the wheels of the vehicle is lost due to energy converted to heat within the structure of the tire as well as friction between the tire and the road, which creates resistance, decreasing fuel efficiency.

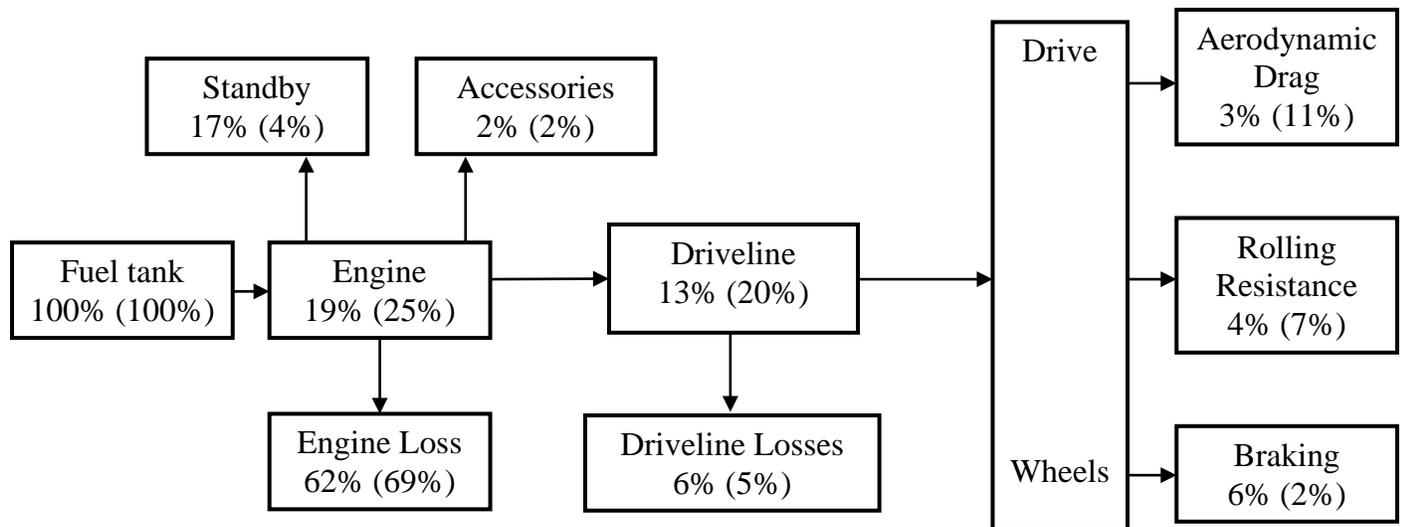


Figure 1. Uses and Losses of Fuel Energy in a Vehicle – Estimates of City and Highway Usage (Highway Figures Appear in Parentheses)²¹

As noted above, a tire’s rolling resistance is the energy consumed by a rolling tire, or the mechanical energy converted into heat by a tire, moving a unit distance on the roadway.²² The

²¹ See <http://www.fueleconomy.gov/feg/atv.shtml> (last accessed Sept. 24, 2009); 2006 NAS Report, *supra* note 4, at 29.

magnitude of rolling resistance depends on the tire used, the nature of the surface on which it rolls, and the operating conditions – inflation pressure, load, and speed.²³

2. Relationship between tire maintenance and tire fuel efficiency and vehicle fuel economy

Tires with reduced inflation pressure exhibit more sidewall bending and tread shearing. This increased deformation causes increased energy loss by the flexing of the rubber. Further, tires with less than optimal inflation pressure have a larger footprint of the tire on the road, creating more contact between the tire and the road, also increasing rolling resistance. Therefore, properly inflated tires have less rolling resistance and higher fuel efficiency than under-inflated tires. Moreover, all tires need proper inflation and proper maintenance to achieve their intended levels of efficiency, safety, wear, and operating performance. Thus, a strong message urging vigilant maintenance of inflation must be a central part of communicating information on the fuel efficiency performance of tires to motorists.²⁴

In addition to proper tire inflation pressure, combinations of differences in tire dimensions, design, materials, and construction features will cause tires to differ in rolling resistance as well as in many other attributes such as traction, handling, noise, wear resistance, and appearance.²⁵ Thus, when choosing among replacement tires, consumers choose among tires varying in price, style, and many aspects of performance, including rolling resistance, treadwear life, and traction. Every year Americans spend approximately \$20 billion replacing

²² Rolling resistance is, thus, defined as energy per unit distance, which is the same units as force (Joules/meter = Newtons). However, unlike force, rolling resistance is a scalar quantity with no direction associated with it. National Highway Traffic Safety Administration, *The Pneumatic Tire*, DOT HS 810 561, at 477 (February 2006).

²³ *Id.*

²⁴ 2006 NAS Report, *supra* note 4, at 5, 97.

²⁵ *Id.* at 1.

about 200 million passenger car tires.²⁶ Thus, the tires consumers purchase will not only affect the handling, traction, ride comfort, and appearance of their cars, but also the fuel economy.²⁷

Fuel economy improvements are a large part of ensuring a more secure energy future.²⁸ EISA will help reduce America's dependence on oil by reducing U.S. demand for oil by requiring the light duty vehicle industry to achieve a national average fuel economy of at least 35 miles per gallon by 2020 for passenger cars and light trucks combined. Achieving this will entail increasing fuel economy standards by 40 percent and resulting in saving billions of gallons of fuel. In accordance with the President's May 19, 2009 announcement, on September 28, 2009, NHTSA and EPA issued a joint NPRM, with NHTSA proposing CAFE standards under EPCA, as amended by EISA, and EPA proposing greenhouse gas emissions standards under the Clean Air Act.²⁹ This proposal would require a fleet-wide fuel economy of 34.1 miles per gallon (mpg) by 2016, thus nearly reaching the EISA target four years earlier than the EISA deadline. Today's rule complements that proposal by establishing a tire fuel efficiency rating system and consumer education program that will contribute to increases in actual on-road fuel economy achieved, even for vehicles currently in service.

Further, improving fuel economy reduces the amount of tailpipe emissions of CO₂. CO₂ emissions are directly linked to fuel consumption because CO₂ is an ultimate end product of burning gasoline. The more fuel a vehicle burns, the more CO₂ it emits. Since the CO₂ emissions are essentially constant per gallon of fuel combusted, the amount of fuel consumption per mile is directly related to the amount of CO₂ emissions per mile. Thus, improvements in fuel

²⁶ H.R. Rep. No. 109-537, at 3 (June 28, 2006); 2006 NAS Report, *supra* note 4, at 1.

²⁷ Most passenger tires are replaced every 3 to 5 years because of wear. *Id.*

²⁸ See Proposed Rulemaking to Establish Light-Duty Vehicle Greenhouse Gas Emissions Standards and Corporate Average Fuel Economy Standards, 74 FR 49454, 49631 (Sept. 28, 2009).

²⁹ *Id.*

economy necessarily reduce tailpipe emissions of CO₂.³⁰ The need to take action to reduce greenhouse gas emissions, e.g., motor vehicle tailpipe emissions of CO₂, in order to forestall and even mitigate climate change is well recognized.³¹

3. 2006 National Academy of Sciences report

In the Consolidated Appropriations Act of 2004,³² Congress provided funding through the USDOT/NHTSA to the National Academy of Sciences (NAS) to develop and perform a national tire fuel efficiency study and literature review.³³ The NAS was to assess the feasibility of reducing rolling resistance in replacement tires and the effects of doing so on vehicle fuel consumption, tire wear life and scrap tire generation, and tire operating performance as it relates to motor vehicle safety. Congress asked that the assessment include estimates of the effects of reductions in rolling resistance on consumer spending on fuel and tire replacement.

In April 2006, the Transportation Research Board and the Board on Energy and Environmental Systems, part of the National Academies' Division on Engineering and Physical Sciences, released Special Report 286, *Tires and Passenger Vehicle Fuel Economy: Informing Consumers and Improving Performance* (2006 NAS Report).³⁴ The 2006 NAS Report concluded that reduction of average rolling resistance of replacement tires by 10 percent was technically and economically feasible, and that such a reduction would increase the fuel

³⁰ *Id.* at 24356.

³¹ IPCC (2007): *Climate Change 2007: Mitigation of Climate Change. Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* [B. Metz, O. Davidson, P. Bosch, R. Dave, and L. Meyer (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

³² H.R. Rep. No. 108-401, at 971 (Nov. 25, 2003) (Conf. Rep.).

³³ Ultimately the task was given to the Committee for the National Tire Efficiency Study of the Transportation Research Board, a division of the National Research Council that is jointly administered by the National Academy of Sciences, the National Academy of Engineering, and the Institute of Medicine.

³⁴ Transportation Research Board Special Report 286, *Tires and Passenger Vehicle Fuel Economy*, National Research Council of the National Academies (2006). Docket No. NHTSA-2008-0121-0008.

economy of passenger vehicles by 1 to 2 percent, saving about 1 to 2 billion gallons of fuel per year nationwide.³⁵

A reduction in the average rolling resistance of replacement tires in the vehicle fleet can occur through various means. Consumers could purchase more tires that are now available with lower rolling resistance, tire designs could be modified, and new tire technologies that offer reduced rolling resistance could be introduced. More vigilant maintenance of tire inflation pressure may further this outcome as well.³⁶ The 2006 NAS Report concluded that consumers, if sufficiently informed and interested, could bring about a reduction in average rolling resistance by adjusting their tire purchases and by taking proper care of their tires once in service, especially by maintaining recommended inflation pressure.³⁷

The 2006 NAS Report observed that consumers currently have little, if any, practical way of assessing how tire choices can affect vehicle fuel economy. Recognizing this market failure, the Report recommended that Congress authorize and make sufficient resources available for NHTSA to prompt and work with the tire industry in gathering and reporting information on the influence of passenger tires on vehicle fuel consumption.³⁸ The 2006 NAS Report recognized the challenge of changing consumer preference and behavior, but recommended Congressional action nonetheless because of the potential societal benefits associated with increasing effective on-road fuel economy by even 1 to 2 percent.³⁹ This ambitious undertaking must begin with information concerning the tire's influence on fuel efficiency being made widely and readily available to tire buyers and sellers. The consumer tire information program mandated by EISA and promulgated in today's notice begins this undertaking.

³⁵ *Id.* at 2-3.

³⁶ *Id.* at 3.

³⁷ *Id.*

³⁸ *Id.* at 2, 4.

³⁹ *Id.*

B. Efforts by other governments to establish consumer information programs to address these issues

Other countries have also begun working towards increasing on-road fuel economy by reducing average rolling resistance. These countries include those of the European Union and Japan. In addition, the State of California has also initiated a program to increase vehicle fuel economy using tire efficiency ratings.

1. California

In 2001, California Senate Bill 1170 authorized the California Energy Commission (CEC) to conduct a study to investigate opportunities for increasing usage of low rolling resistance tires in California.⁴⁰ The study concluded that there was a potential for substantial vehicle fuel savings from an increase in the use of properly inflated, low rolling resistance tires. As a result of this study, in October 2003, the California state legislature adopted Assembly Bill No. 844 (AB 844),⁴¹ which required the CEC to develop a comprehensive fuel efficient tire program.⁴²

The program would consist of three phases. In the first phase, the CEC will develop a database with information on the fuel efficiency of replacement tires sold in California, develop a rating system for the energy efficiency of replacement tires, and develop a manufacturer reporting requirement for the energy efficiency of replacement tires.⁴³ In the second phase, the CEC will consider whether to adopt standards for replacement tires to ensure that replacement

⁴⁰ See Cal. Pub. Res. Code §§ 25000.5, 25722-25723 (2009); 2001 Cal. Legis. Serv. Ch. 912 (S.B. 1170) (West).

⁴¹ See Cal. Pub. Res. Code §§ 25770-25773; 2003 Cal. Legis. Serv. Ch. 645 (A.B. 844) (West).

⁴² Specifically, AB 844 required the State Energy Resources Conservation Board “to adopt, on or before July 1, 2007, and implement, no later than July 1, 2008, a replacement tire fuel efficiency program of statewide applicability for replacement tires for passenger cars and light-duty trucks, that is designed to ensure that replacement tires sold in the state are at least as energy efficient, on average, as the tires sold in the state as original equipment on those vehicles.” Cal. Pub. Res. Code § 25772.

⁴³ See *id.* at § 25771.

tires sold in the State are at least as energy efficient, on average, as original equipment tires.⁴⁴ In deciding whether to adopt standards, the CEC must ensure that a standard:

- is technically feasible and cost effective;
- does not adversely affect tire safety;
- does not adversely affect the average life of replacement tires; and
- does not adversely affect the state effort to manage scrap tires.⁴⁵

If standards are adopted, the CEC will also develop consumer information requirements for replacement tires for which standards apply. In the third phase, the CEC must review and revise the program at least every three years.⁴⁶

On June 10, 2009, the Transportation Policy Committee of the CEC conducted a workshop regarding the Energy Commission Fuel Efficient Tire Program. As part of that workshop, the CEC staff draft regulation was made public.⁴⁷ The draft regulation would specify testing and reporting requirements for manufacturers, and describes the database the CEC will maintain. The draft regulation would define a “fuel efficient tire” as a tire with “a declared fuel efficiency rating value no higher than 1.15 times the lowest declared fuel efficiency rating value for all tires in its combined tire size designation and load index.”⁴⁸

2. European Union

Europe is approaching the issue of tire fuel efficiency from two directions. On July 13, 2009, Regulation (EC) No 661/2009 of the European Parliament and of the Council of the

⁴⁴ See *id.* at § 25772. By contrast, EISA does not provide NHTSA with the authority to directly regulate the fuel efficiency of tires. EISA’s mandates to NHTSA regarding replacement tire fuel efficiency relate only to developing ratings and disseminating information to consumers.

⁴⁵ See *id.* at § 25773.

⁴⁶ *Id.*

⁴⁷ See http://www.energy.ca.gov/transportation/tire_efficiency/documents/index.html#061009 (last accessed Sept. 24, 2009).

⁴⁸ Publication # CEC-600-2009-010-SD (posted May 29, 2009), available at <http://www.energy.ca.gov/2009publications/CEC-600-2009-010/CEC-600-2009-010-SD.PDF> (last accessed Nov. 12, 2009).

European Union concerning new type-approval requirements for the general safety of motor vehicles was adopted.⁴⁹ One of the new requirements in this regulation will gradually prohibit original equipment and replacement tires with a rolling resistance coefficient (RRC) above certain levels beginning November 1, 2012.

On April 22, 2009, the European Parliament adopted another Commission proposal, “Fuel Efficiency: Labeling of Tyres.” The new regulation will require original equipment and replacement tires to be rated for rolling resistance, wet grip and noise.⁵⁰ The rolling resistance rating is determined using the same test procedure as in ISO 28580:2009(E), Passenger car, truck and bus tyres – Methods of measuring rolling resistance – Single point test and correlation of measurement results. The ratings must be provided to consumers in a label on the tire, or at the point of sale (e.g., in cases where the tire itself is not visible at the point of sale), and also in technical promotional literature, including websites. The label design is the same A to G scale as that used to rate the energy efficiency of household appliances in Europe.⁵¹ It will apply to tires fitted to passenger cars as well as light and heavy duty vehicles. Tire manufacturers are required to have a link on their website to the European Commission webpage covering the new Regulation. The new regulation will go into effect on November 1, 2012, but tire manufacturers are encouraged to comply earlier.

3. Japan

In late 2008 the Ministry of Economy, Trade and Industry (METI) and the Ministry of Land, Infrastructure, Transport and Tourism (MLIT) announced a decision to establish a fuel

⁴⁹ Commission Regulation 661/2009, 2009 O.J. (L 200) 1, available at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:200:0001:0024:EN:PDF> (last accessed Nov. 12, 2009).

⁵⁰ See <http://www.europarl.europa.eu/oeil/FindByProcnum.do?lang=2&procnum=COD/2008/0221> (last accessed Nov. 12, 2009). Mandatory requirements are also proposed to begin in October 2010 for wet grip and external rolling noise.

⁵¹ See Council Directive 1992/75/EEC, 1992 O.J. (L 297) 16-19 (on the indication by labeling and standard product information of the consumption of energy and other resources by household appliances).

efficient tire program.⁵² The stated objectives are to include standards for measuring rolling resistance, providing information to consumers, and consideration of ways to ensure proper tire pressure management (either through tire pressure monitoring systems or consumer education).⁵³ Japan has been participating in the development of ISO 28580.

C. Energy Independence and Security Act of 2007 mandated consumer tire information program

The legislation that eventually became section 111 of EISA mandating the tire fuel efficiency consumer education program was originally introduced by itself in the U.S. House of Representatives as H.R. 5632⁵⁴ following the recommendations in the 2006 NAS Report.⁵⁵ The bill was introduced on June 16, 2006, and on June 28, 2006, the House Committee on Energy and Commerce reported on a slightly amended version of the bill.⁵⁶ It was never acted upon by the 109th Congress, but it was inserted into a comprehensive energy bill as the 110th Congress began to develop it in May 2007.

The Motor Vehicle Information and Cost Savings Act, which was enacted in 1972, mandated a federal program to provide consumers with accurate information about the comparative safety and damageability of passenger cars. These requirements were codified in Chapter 323 of Title 49 of the United States Code (USC). EISA added section 32304A to Title 49 USC, Chapter 323 which gives authority to the Department of Transportation (DOT) to

⁵² See http://www.meti.go.jp/english/press/data/20081226_01.html (last accessed Nov. 12, 2009).

⁵³ Tire manufacturers in Japan have recently proposed a voluntary rating system that includes rolling resistance and wet grip. Rolling resistance is divided into five categories labeled AAA, AA, A, B, and C. Wet grip is divided into four categories labeled a, b, c, and d. For additional information, see <http://translate.google.com/translate?u=http%3A%2F%2Fwww.tftc.gr.jp%2Ftirepark%2Fperformance%2Flabel%2Flabel.html&sl=ja&tl=en&hl=&ie=UTF-8> (last accessed March 11, 2010).

⁵⁴ H.R. 5632, 109th Cong. (2d Sess. 2006).

⁵⁵ Previous attempts to establish a national tire fuel efficiency program can be found in proposed amendments to various energy bills in prior years. See e.g., S. Amdt. 3083, 108th Cong., 150 Cong. Rec. S4710 (2004) (proposing to amend S. 150); S. Amdt. 1470, 108th Cong., 149 Cong. Rep. S10707 (2003) (proposing to amend S. 14). These amendments proposed regulating the fuel efficiency of tires in addition to a tire fuel efficiency grading system and consumer information program, and were not adopted.

⁵⁶ See H.R. Rep. No. 109-537 (2006).

establish a new consumer tire information program to educate consumers about the effect of tires on automobile fuel efficiency, safety, and durability. The DOT has delegated authority to NHTSA at 49 CFR § 1.50. We have summarized below the requirements of title 49 USC § 32304A, the consumer tire information program provision enacted by EISA.

1. Tires subject to the consumer information program

The national tire fuel efficiency consumer information program mandated by EISA and established in this notice is applicable “only to replacement tires covered under section 575.104(c) of title 49, Code of Federal Regulations” (CFR), as that regulation existed on the date of EISA’s enactment.⁵⁷ Section 575.104 of title 49 CFR is the federal regulation that requires motor vehicle and tire manufacturers and tire brand name owners to provide information indicating the relative performance of passenger car tires in the areas of treadwear, traction, and temperature resistance. This section of NHTSA’s regulations specifies the test procedures to determine uniform tire quality grading standards (UTQGS), and mandates that these standards be molded onto tire sidewalls.

Section 575.104 applies only to “new pneumatic tires for use on passenger cars ... [but] ... does not apply to deep tread, winter-type snow tires, space-saver or temporary use spare tires, tires with nominal rim diameters of 12 inches or less, or to limited production tires as defined in [49 CFR § 575.104(c)(2)].”⁵⁸ Accordingly, the tire fuel efficiency consumer information program described in today’s notice applies only to replacement passenger car tires with the same exclusions as the UTQGS regulation.

2. Mandate to create a national tire fuel efficiency rating system

⁵⁷ 49 U.S.C. § 32304A(a)(3).

⁵⁸ 49 CFR § 575.104(c)(1).

EISA requires NHTSA to “promulgate rules establishing a national tire fuel efficiency consumer information program for replacement tires designed for use on motor vehicles to educate consumers about the effect of tires on automobile fuel efficiency, safety, and durability.”⁵⁹ EISA specifies that the regulations establishing the program are to be issued not later than December 19, 2009.⁶⁰

Section 111 of EISA specifically mandates “a national tire fuel efficiency rating system for motor vehicle replacement tires to assist consumers in making more educated tire purchasing decisions.”⁶¹ However, NHTSA may “not require permanent labeling of any kind on a tire for the purpose of tire fuel efficiency information.”⁶²

The only Committee Report commenting on the legislation that eventually became section 111 of EISA explained that the need for this program was established by the 2006 NAS Report, which concluded that if consumers were sufficiently informed and interested, they could bring about a reduction in average rolling resistance (and thus an increase in average on-road fuel economy) by adjusting their tire purchases and by taking proper care of their tires once in service.⁶³ Thus, NHTSA reviewed conclusions and recommendations in the 2006 NAS Report regarding how best to inform consumers using a tire fuel efficiency rating system.

Specifically, the 2006 NAS Report concluded that rolling resistance measurement of new tires can be informative to consumers, especially if they are accompanied by reliable information

⁵⁹ 49 U.S.C. § 32304A(a)(1).

⁶⁰ EISA was signed into law on December 19, 2007. EISA specifies that “[n]ot later than 24 months after the date of enactment ... [NHTSA] shall, after notice and opportunity for comment, promulgate rules establishing a national tire fuel efficiency consumer information program for replacement tires designed for use on motor vehicles to educate consumers about the effect of tires on automobile fuel efficiency, safety, and durability.” 49 U.S.C. § 32304A(a)(1).

⁶¹ 49 U.S.C. § 32304A(a)(2)(A).

⁶² *Id.* at § 32304A(d).

⁶³ H.R. Rep. No. 109-537, at 3 (2006).

on other tire characteristics such as treadwear and traction.⁶⁴ The 2006 NAS Report further stated that consumers benefit from the ready availability of easy-to-understand information on all major attributes of their purchases, and that tires are no exception. A tire's influence on vehicle fuel economy is an attribute that is likely to be of interest to many tire buyers.⁶⁵ NHTSA has attempted to keep these key observations in mind in the development of this final rule.

3. Communicating information to consumers

EISA specifies that this rulemaking to establish a national tire fuel efficiency consumer information program must include “requirements for providing information to consumers, including information at the point of sale and other potential information dissemination methods, including the Internet.”⁶⁶ While there is little to no legislative history of EISA itself, the legislation that eventually became section 111 of EISA was originally introduced in June 2006 with this identical requirement.⁶⁷

As noted above, on June 28, 2006, the House Committee on Energy and Commerce reported on a slightly amended version of the bill and noted that “[t]he bill ... would require tire retailers to provide consumers with information on the tire fuel efficiency rating of motor vehicle tires at the point of sale.”⁶⁸ Thus, NHTSA believes that the suggestion of point of sale requirements indicates that Congress intended NHTSA's authority to establish information

⁶⁴ 2006 NAS Report, *supra* note 4, at 4. The 2006 NAS Report specifically noted that “[i]deally, consumers would have access to information that reflects a tire's effect on fuel economy averaged over its anticipated lifetime of use, as opposed to a measurement taken during a single point in the tire's lifetime, usually when it is new.” *Id.* However, “[n]o standard measure of lifetime tire energy consumption is currently available, and the development of one deserves consideration. Until such a practical measure is developed, rolling resistance measurements of new tires can be informative to consumers...” *Id.*

⁶⁵ 2006 NAS Report, *supra* note 4, at 4.

⁶⁶ 49 U.S.C. §32304A(a)(2)(B).

⁶⁷ See H.R. 5632, 109th Cong. (2d Sess. 2006).

⁶⁸ See H.R. Rep. No. 109-537, at 5 (2006).

dissemination requirements to be broad enough to include requirements for both tire manufacturers, which by statute includes importers,⁶⁹ and tire dealers/retailers and distributors.

4. Specification of test methods

Section 111 of EISA also mandates that this rulemaking include “specifications for test methods for manufacturers to use in assessing and rating tires to avoid variation among test equipment and manufacturers.”⁷⁰ See section IV of this notice for a discussion of NHTSA’s specification of the ISO 28580 test procedure to measure rolling resistance.

We note that the 2006 NAS Report, the recommendations from which formed the basis for the legislation that became section 111 of EISA, indicated that “[a]dvice on specific procedures for measuring and rating the influence of individual passenger tires on fuel economy and methods of conveying this information to consumers [was] outside the scope of this study.”⁷¹ Accordingly, after publication of the 2006 NAS Report and in anticipation of Congressional legislation based off its recommendations, NHTSA embarked on a large-scale research project in July 2006 to evaluate existing tire rolling resistance test methods.⁷²

5. Creating a national consumer education program on tire maintenance

Section 111 of EISA further directs NHTSA to establish in this rulemaking “a national tire maintenance consumer education program including, information on tire inflation pressure,

⁶⁹ See 49 U.S.C. § 32101(5) (defining manufacturer as “a person (A) manufacturing or assembling passenger motor vehicles or passenger motor vehicle equipment; or (B) importing motor vehicles or motor vehicle equipment for resale.”). For purposes of the statute, the importer of any tire is a manufacturer. An importer is responsible for every tire it imports and is subject to civil penalties in the event of any violations. The U.S. Customs and Border Protection may deny entry at the port to items that do not conform to applicable requirements.

⁷⁰ 49 U.S.C. § 32304A(a)(2)(C).

⁷¹ 2006 NAS Report, *supra* note 4, at 4.

⁷² See NHTSA Tire Rolling Resistance Rating System Test Development Project: Phase 1 – Evaluation of Laboratory Test Protocols (October 2008). Docket No. NHTSA-2008-0121-0019.

alignment, rotation, and treadwear to maximize fuel efficiency, safety, and durability.”⁷³

NHTSA already has some information regarding tire maintenance on its safercar.gov website.⁷⁴

The 2006 NAS Report, the recommendations from which formed the basis for the legislation that became section 111 of EISA, noted that consumers benefit from the ready availability of easy-to-understand information on all major attributes of their purchases, and that replacement tires’ influence on vehicle fuel economy is an attribute that is likely to be of interest to many tire buyers.⁷⁵ NHTSA has focused on these principles in determining the best way to make the information in this program both of interest to consumers and easy to understand. The 2006 NAS Report further noted that “industry cooperation is essential in gathering and conveying tire performance information that consumers can use in making tire purchases.”⁷⁶ NHTSA agrees that cooperation with the tire manufacturer and tire retailer industries, as well as other interested parties will be vital to the success of this program. The agency has held initial consultations with various groups of industry and the environmental community, as well as other Government agencies, to seek their views.

6. Consultation in setting standards

Section 111 of EISA provides that NHTSA is to consult with the Department of Energy (DOE) and Environmental Protection Agency (EPA) “on the means of conveying tire fuel efficiency consumer information.”⁷⁷ One of the recommendations of the 2006 NAS Report, which formed the basis for the legislation that became section 111 of EISA, stated that NHTSA

⁷³ 49 U.S.C. § 32304A(a)(2)(D).

⁷⁴ *See generally*

<http://www.safercar.gov/portal/site/safercar/menuitem.13dd5c887c7e1358fefe0a2f35a67789/?vgnextoid=0e0aaa8c16e35110VgnVCM1000002fd17898RCRD> (last accessed Sept. 24, 2009).

⁷⁵ 2006 NAS Report, *supra* note 4, at 96.

⁷⁶ *Id.*

⁷⁷ 49 U.S.C. § 32304A(b). In addition, Executive Order No. 13432 provides that a Federal agency undertaking a regulatory action that can reasonably be expected to directly regulate emissions, or to substantially and predictably affect emissions, of greenhouse gasses from motor vehicles, shall act jointly and consistently with other agencies to the extent possible and to consider the views of other agencies regarding such action.

should consult with the EPA “on means of conveying the information and ensure that the information is made widely available in a timely manner and is easily understood by both buyers and sellers.”⁷⁸ NHTSA has fulfilled the statutory consultation requirement in a way that best serves the goals of EISA.

NHTSA consulted with representatives of DOE, EPA, and the Federal Trade Commission (FTC)⁷⁹ who work in energy efficiency consumer information and rating programs. These agencies provided feedback on NHTSA’s draft final rule which included valuable comments and insight based on their experiences communicating information on the energy efficiency of consumer products.

7. Application with State and local laws and regulations

Section 111 of EISA contains both an express preemption provision and a savings provision that address the relationship of the national tire fuel efficiency consumer information program to be established under that section with State and local tire fuel efficiency consumer information programs. Section 111 provides:

Nothing in this section prohibits a State or political subdivision thereof from enforcing a law or regulation on tire fuel efficiency consumer information that was in effect on January 1, 2006. After a requirement promulgated under this section is in effect, a State or political subdivision thereof may adopt or enforce a law or regulation on tire fuel efficiency consumer information enacted or promulgated after January 1, 2006, if the requirements of that law or regulation are identical to the requirement promulgated under this section. Nothing in this section shall be construed to preempt a State or political subdivision thereof from regulating the fuel efficiency of tires (including establishing testing methods for determining compliance with such standards) not otherwise preempted under this chapter.⁸⁰

⁷⁸ 2006 NAS Report, *supra* note 4, at 4.

⁷⁹ The Federal Trade Commission (FTC) developed the EnergyGuide label to enable consumers to compare the energy use of different models as consumers shop for an appliance. *See* <http://www.ftc.gov/bcp/edu/pubs/consumer/homes/real4.shtm> (last accessed Sept. 24, 2009). Section 321(b) of EISA directs the FTC to consider the effectiveness of current lamp disclosures and to consider whether alternative labeling disclosures would be more effective in helping consumers make purchasing decisions.

⁸⁰ 49 U.S.C. § 32304A(e).

In the NPRM, NHTSA sought public comment on the scope of Section 111 generally, and in particular on whether, and to what extent, Section 111 would or would not preempt tire fuel consumer information regulations that the administrative agencies of the State of California may promulgate in the future pursuant to California's Assembly Bill 844 (AB 844).⁸¹ We discuss these comments in section XIV.D below.

8. Compliance and enforcement

Section 111 of EISA added a new sub-provision to 49 U.S.C. § 32308 (General prohibitions, civil penalty, and enforcement) which reads as follows:

Any person who fails to comply with the national tire fuel efficiency information program under section 32304A is liable to the United States Government for a civil penalty of not more than \$50,000 for each violation.

The RMA recommended that NHTSA clarify how it intends to enforce this provision and subject its interpretation to comment. See section XI for more detail on RMA's comments on this provision and NHTSA's response.

9. Reporting to Congress

EISA also requires that NHTSA conduct periodic assessments of the rules promulgated under this program "to determine the utility of such rules to consumers, the level of cooperation by industry, and the contribution to national goals pertaining to energy consumption."⁸² NHTSA must "transmit periodic reports detailing the findings of such assessments to the Senate Committee on Commerce, Science, and Transportation and the House of Representatives Committee on Energy and Commerce."⁸³

⁸¹ Cal. Pub Res. Code §§ 25770-25773; 2003 Cal. Legis. Serv. Ch. 645 (A.B. 844) (West). This California legislation mandated that the California Energy Commission (CEC) develop and implement both a tire efficiency program and a corresponding consumer information program, and was passed on October 1, 2003.

⁸² 49 U.S.C. § 32304A(c).

⁸³ *Id.*

III. Scope of the tire fuel efficiency consumer information program

A. Which tires must be rated?

As explained above in section II.C.1 of this notice, EISA specifies that the tire fuel efficiency requirements are to “apply only to replacement tires covered under [49 CFR] section 575.104(c)” (NHTSA’s UTQGS regulation).⁸⁴ Title 49 CFR, section 575.104 applies only to “new pneumatic tires⁸⁵ for use on passenger cars” with some exclusions of particular types of tires.⁸⁶ All terms in 49 CFR Part 575 are as defined by the Safety Act or in 49 CFR Part 571, Federal Motor Vehicle Safety Standards (FMVSSs).⁸⁷ Some commenters had questions about whether or not certain tires were excluded from the program. Others asked about the voluntary rating of tires not covered under the program. These comments are addressed in the sections below.

1. Passenger car tires

Section 571.139 of title 49 CFR (or FMVSS No. 139, New Pneumatic Radial Tires for Light Vehicles) defines “passenger car tire” as “a tire intended for use on passenger cars, multipurpose passenger vehicles, and trucks, that have a gross vehicle weight rating (GVWR) of 10,000 pounds or less.” Accordingly, as stated in the NPRM, the tire fuel efficiency consumer information program applies only to replacement passenger car tires, which are tires intended for

⁸⁴ 49 U.S.C. § 32304A(a)(3).

⁸⁵ The term pneumatic tires is a broad one that essentially means air-filled tires. Section 571.139 of title 49 CFR (or FMVSS No. 109, New Pneumatic Radial Tires for Light Vehicles) defines pneumatic tire broadly as “a mechanical device made of rubber, chemicals, fabric and steel or other materials, which, when mounted on an automotive wheel, provides the traction and contains the gas or fluid that sustains the load.” By contrast, a non-pneumatic tire is a “mechanical device which transmits . . . the vertical load and tractive forces from the roadway to the vehicle, generates the tractive forces that provide the directional control of the vehicle and does not rely on the containment of any gas or fluid for providing those functions.” 49 CFR § 571.129, New Non-pneumatic Tires for Passenger Cars.

⁸⁶ 49 CFR § 575.104(c)(1).

⁸⁷ 49 CFR § 575.2, Definitions.

use on passenger cars, multipurpose passenger vehicles, and trucks, that have a GVWR of 10,000 pounds or less.⁸⁸

These tires often have a tire size designation beginning with a “P,” indicating that they are for use on passenger cars. However, they may be designated without the P, sometimes referred to as “hard metric” sizes. Many smaller sport utility vehicles (SUVs), pickup trucks, and vans are equipped with passenger car tires, even though these vehicles are classified as light trucks by NHTSA.⁸⁹ Ordinarily, the kinds of light- and medium-duty trucks used in commercial service, including full-size pickups and vans, have a GVWR of more than 6,000 pounds. These vehicles are usually equipped with tires having the letters “LT” molded into the sidewall.⁹⁰ EISA excludes replacement LT tires from the tire fuel efficiency consumer information program.⁹¹ JATMA asked for confirmation of their understanding that LT tires are not included in the scope of the tire fuel efficiency consumer information program.⁹² As explained in this section, that understanding is correct.

Providing information on LT tires: ICCT asked that NHTSA, since EISA does not appear to contain any restriction on NHTSA providing information to consumers, investigate whether our data combined with California and European Union tire testing data would provide enough data for NHTSA to provide consumers with information on LT tires on the agency’s

⁸⁸ This FMVSS No. 139 definition of “passenger car tires” is consistent with past agency interpretations of the scope of 49 CFR § 575.104. See April 24, 1980 Letter to Mr. Robert A. Eddy (McCreary Tire & Rubber Company) (explaining that tires “which are manufactured solely for use on a traction test trailer would not fall within the application of the UTQG Standards”); October 27, 1978 Letter to Mr. Ken Yoneyama (Bridgestone) (explaining that “UTQGS applies to a tire type whose predominant contemplated use is on passenger cars, even if the manufacturer knows the tire type is also used as original equipment on multi-purpose passenger vehicles”).

⁸⁹ 2006 NAS Report, *supra* note 4, at 14.

⁹⁰ *Id.*

⁹¹ 49 U.S.C. § 32304A(a)(3).

⁹² Docket No. NHTSA-2008-0121-0031.1 at 1.

online website.⁹³ ICCT commented that this is especially important given the high rolling resistances that NHTSA reported for LT tires.⁹⁴

Agency response: NHTSA agrees that educating consumers about the general qualities and trends of rolling resistance for tires excluded under the program, including LT tires, is worthwhile because consumers currently do not have any information about the relative fuel efficiency between different types of tires. While section 111 of EISA is limited to “only ... replacement tires covered under [NHTSA’s UTQGS regulation],”⁹⁵ nothing in EISA appears to restrict NHTSA from educating the public about motor vehicles and motor vehicle equipment using information generated by the agency, as it already does for many different tire characteristics. As noted in the NPRM, the agency expects test data to be available for many LT tires, as these tires are covered by the Europe and California programs, in addition to some LT tires having been included in NHTSA’s Phase 1 research for this rulemaking.⁹⁶ NHTSA tested some LT tires in its Phase 1 research because that research was initiated in July 2006, subsequent to the release and based on the recommendations in the 2006 NAS Report, before the passage of EISA. Moreover, by educating consumers about what type of comparative fuel efficiency they can expect between replacement passenger car tires and original equipment (OE) tires or LT tires, the agency would not be mandating anything of tire manufacturers or tire retailers, but merely using information that has already been generated by NHTSA and other government regulatory bodies, and is available under the Freedom of Information Act.

Passenger car tires used on trailers: The National Association of Trailer Manufacturers (NATM) commented it did not believe Congress intended to include replacement tires sold for

⁹³ Docket No. NHTSA-2008-0121-0042.1 at 2.

⁹⁴ See Tire Fuel Efficiency NPRM, *supra* note 9, at 29553.

⁹⁵ 49 U.S.C. § 32304A(a)(3).

⁹⁶ See Tire Fuel Efficiency NPRM, *supra* note 9, at 29552-29553.

use on trailers to be within the scope of the tire fuel efficiency consumer information program.⁹⁷ NATM explained that some of its trailer manufacturer, trailer dealer, and trailer-parts distribution members sell “P” tires to consumers for replacement use on light-duty trailers, particularly small utility trailers. NATM believes that NHTSA’s proposed definition of passenger car tire could be read to include those replacement “P” tires sold by NATM members for use on light-duty trailers. Specifically, NATM stated that the “intended for use” language in the passenger car tire definition could be interpreted to bring under the jurisdiction of this program “P” tires that may have been designed and manufactured primarily for use on passenger cars but that ultimately are sold for use on trailers. NATM suggests that NHTSA modify the definition of passenger car tire to read: “*Passenger car tire* means a tire sold for use on passenger cars, multipurpose passenger vehicles, and trucks, that have a gross vehicle weight rating (GVWR) of 10,000 pounds or less.”

Agency response: NHTSA disagrees with NATM’s suggested definition for passenger car tires. The statute provides that the tire fuel efficiency consumer information program is “for replacement tires designed for use on motor vehicles.”⁹⁸ The statute’s applicability section states that this section shall apply “only to replacement tires covered under [49 CFR] section 575.104(c)” as of December 19, 2007, when the Ten-in-Ten Fuel Economy Act⁹⁹ became law.¹⁰⁰ For this reason, NHTSA believes Congress intended the agency look to the UTQGS regulation for appropriate definitions of different types of tires. Section 575.104(c) provides that section 575.104, Uniform tire quality grading standards, apply “to new pneumatic tires for use on passenger cars,” subject to some exclusions, such as for winter-type snow tires, space-saver or temporary use spare tires, and tires with nominal rim diameters of 12 inches or less.

⁹⁷ Docket No. NHTSA-2008-0029.1.

⁹⁸ 49 U.S.C. § 32304A(a)(1).

⁹⁹ The “Ten-in-Ten Fuel Economy Act” is the short title of EISA Title I, Energy Security Through Improved Vehicle Fuel Economy. Pub. L. 110-140, § 101.

¹⁰⁰ 49 U.S.C. § 32304A(a)(3).

The definitions governing 49 CFR Part 575 are contained in 49 CFR § 575.2. This section states that all terms in 49 CFR Part 575 are as defined by the Safety Act or in the Federal Motor Vehicle Safety Standards, 49 CFR Part 571. Neither “passenger car tires” nor “tires for passenger cars” is defined in the Safety Act.¹⁰¹ Therefore, NHTSA looked to the FMVSSs for definitions. As of December 2007, NHTSA had regulations on passenger car tires.¹⁰² Those regulations define passenger car tire as follows: “Passenger car tire means a tire intended for use on passenger cars, multipurpose passenger vehicles, and trucks, that have a gross vehicle weight rating of (GVWR) of 10,000 pounds or less.”¹⁰³ In view of the applicability statement in EISA referring to the UTQGS regulations (§ 575.104), the UTQGS definitional reference to the Federal Motor Vehicle Safety Standards (§ 575.2), and the fact that passenger car tire is defined in a FMVSS, NHTSA interprets the consumer tire information program in EISA as applying to passenger car tires as defined in 49 CFR 571.139. For these reasons, NHTSA’s definition of passenger car tires is taken from FMVSS No. 139. This FMVSS No. 139 definition of “passenger car tires” is consistent with past agency interpretations of the scope of the UTQGS regulations.¹⁰⁴

However, based on EISA’s applicability only to replacement passenger car tires (with some limited exclusions), NHTSA does agree with NATM that EISA did not contemplate that the tire fuel efficiency consumer information program would include information to educate consumers about tires they are purchasing for trailers.¹⁰⁵ Accordingly, tire retailers that sell only

¹⁰¹ See 49 U.S.C. § 30102.

¹⁰² See FMVSS No. 139, New Pneumatic Radial Tires for Light Vehicles, 49 CFR § 571.139.

¹⁰³ 49 CFR § 571.139 S3.

¹⁰⁴ See April 24, 1980 Letter to Mr. Robert A. Eddy (McCreary Tire & Rubber Company) (explaining that tires “which are manufactured solely for use on a traction test trailer would not fall within the application of the UTQG Standards”); October 27, 1978 Letter to Mr. Ken Yoneyama (Bridgestone) (explaining that “UTQGS applies to a tire type whose predominant contemplated use is on passenger cars, even if the manufacturer knows the tire type is also used as original equipment on multi-purpose passenger vehicles”).

¹⁰⁵ See 49 U.S.C. § 32304A(a)(3).

replacement passenger car tires for use on trailers, and not for use on any other motor vehicles, would not be considered tire retailers for the purposes of today’s final rule. See section III.B.2 below.

2. Replacement tires

In this final rule, NHTSA is retaining the proposed definition of replacement passenger car tire as “any passenger car tire other than a passenger car tire sold as original equipment on a new vehicle.”¹⁰⁶ As explained in the NPRM, while most UTQGS requirements apply to all passenger car tires, whether sold as original equipment with a new automobile (OE tires) or as a replacement tire, some apply only to replacement tires. For example, the requirement for a paper label on the tire tread excludes tires “sold as original equipment on a new vehicle.”¹⁰⁷ NHTSA is using this language as the basis of a definition of replacement tires for the purposes of the tire fuel efficiency consumer information program because EISA specifies that the tire fuel efficiency consumer information program “shall only apply to replacement tires covered under [the UTQGS regulations].”¹⁰⁸ For this reason, NHTSA believes Congress intended the agency look to the UTQGS regulation for appropriate definitions of different types of tires.

The agency believes the definition of what a replacement tire is (as distinguished from an OE tire) needs to be in terms of the actual sale of the tire, not the intention when manufactured.¹⁰⁹ NHTSA understands that some tires that are manufactured for the OE tire

¹⁰⁶ Tire Fuel Efficiency NPRM, *supra* note 9, at 29553, 29584.

¹⁰⁷ 49 CFR § 575.104(d)(1)(i)(B).

¹⁰⁸ 49 U.S.C. § 32304A(a)(3).

¹⁰⁹ NATM inappropriately cited this statement from the NPRM in its rationale for its request that NHTSA change the definition of passenger care tire addressed above in section III.A.1. The agency used this rationale as a way to ensure that a manufacturer could not state that it intended a passenger car tire to be original equipment, but then it just ended up being sold as a replacement car tire, allowing it to fall outside of the scope of “replacement passenger car tire.” The concern NATM attempted to analogize would be a manufacturer manufacturing a tire *intending* its use only on trailers, but then eventually the tire gets sold for use on a passenger car. NHTSA does not believe that this is a likely situation that outweighs the inefficiencies that would be created using the “sold for use” language in the passenger car tire definition described above.

market could be sold as replacement tires, either because the vehicle manufacturer does not purchase all that are manufactured for that purpose, or because the vehicle manufacturer sells excess stock.

Original equipment tires: Michelin commented that it supported the application of this rulemaking to OE tires. Michelin stated that it is in the best interest of consumers to have the tire performance grading information available for OE tires and clearly displayed on a new vehicle because it will be meaningful for the consumer to have such tire performance information on the vehicle at the point of sale.¹¹⁰ Public Citizen et al. similarly stated that it supports molding¹¹¹ the ratings on all tires, both OE and replacement tires.¹¹²

Agency response: NHTSA proposed a definition of replacement passenger car tire to be “any passenger car tire other than a passenger car tire sold as original equipment on a new vehicle.” As indicated above, NHTSA interprets EISA’s repeated use of the word “replacement tires” – including in the statute’s applicability provision – to indicate that EISA does not give NHTSA authority to mandate a rating system for any tires other than replacement tires; that is, tires sold for use on a new vehicle (OE tires). Therefore, as NHTSA interprets the statute, the agency does not have the authority under EISA section 111 to require vehicle manufacturers to display tire performance information for OE tires. Likewise, EISA expressly forbids NHTSA from requiring any permanent labeling of this information on tires, so the Public Citizen et al. comment is not adopted.¹¹³

However, if tire manufacturers submit rating information on OE tires to NHTSA, the agency will post that information on its tire website for consumers to look up by vehicle make

¹¹⁰ Docket No. NHTSA-2008-0121-0048.1 at 13.

¹¹¹ Section 111 of EISA explicitly prohibits NHTSA from requiring the molding of anything for the purposes of tire fuel efficiency information onto tire sidewalls. 49 U.S.C. § 32204A(d).

¹¹² Docket No. NHTSA-2008-0121-0043.1 at 4.

¹¹³ 49 U.S.C. § 32304A(d).

and model, or by size designation. NHTSA notes that if OE tires are not rated, consumers will not be able to compare replacement tires with the tires that were originally on their vehicle. Therefore, the agency encourages tire manufacturers to voluntarily report OE tire rating information to NHTSA so that consumers are able to compare the performance of their OE tires with what they can expect from potential replacement tires.

Original equipment tires sold as replacement tires: Tire Rack commented that it is an independent tire dealer selling OE and replacement tires and that it believes that the fuel efficiency rating of all OE tires under the scope of the program should be made public to provide consumers with a basis of comparison from which they can begin their search and selection.¹¹⁴

Agency response: NHTSA notes that for purposes of the tire fuel efficiency consumer information program, “OE” passenger car tires sold to consumers at a tire retailer are considered replacement tires under the definition above because they are not being *sold as original equipment on a new vehicle*. These tires were sold from tire manufacturers to Tire Rack for resale. Hence, the manufacturers must provide all of this consumer information for those tires and consumers will be able to look up ratings for those tires on the agency’s tire website. Although NHTSA is not requiring consumers be provided with the tire ratings mandated today when they purchase a new passenger car, retailers like Tire Rack could choose to tell consumers what fuel efficiency rating they are currently operating under by finding a replacement passenger car tire that is identical to the specifications of the original tires on their vehicle. Additionally, consumers could look up ratings for these tires on the tire website.

3. Tires excluded

NHTSA’s UTQGS regulation excludes “deep tread, winter-type snow tires, space-saver or temporary use spare tires, tires with a nominal rim diameter of 12 inches or less, [and] limited

¹¹⁴ Docket No. NHTSA-2008-0121-0026.1 at 2-3.

production tires¹¹⁵.” 49 CFR § 575.104(c)(1). Since EISA specifies that the tire fuel efficiency requirements are to “apply only to replacement tires covered under [NHTSA’s UTQGS regulation],” these exclusions were included in the NPRM and are included in the new regulations for the tire fuel efficiency consumer information program established in today’s final rule.¹¹⁶

Public Citizen et al. commented that it supported requiring deep tread, winter-type snow tires, and space-saver or temporary use spare tires to be rated under the tire fuel efficiency consumer information program.¹¹⁷ Public Citizen et al. explained that deep tread tires are sometimes not intended for sustained highway use, and may create handling problems when used in normal driving, and that NHTSA has not addressed whether improper operation on these specialized tire types is more dangerous. Public Citizen et al. stated that consumers may be interested in performance characteristics of these specialized tire types.

Agency response: As indicated above, because the applicability provision of EISA section 111 specifically limits this program to replacement tires covered under NHTSA’s UTQGS regulation, and the UTQGS regulations specifically exclude requiring deep tread,

¹¹⁵ For UTQGS, a limited production tire is defined as “a tire meeting all of the following criteria, as applicable:

- (i) The annual domestic production or importation into the United States by the tire’s manufacturer of tires of the same design and size as the tire does not exceed 15,000 tires;
- (ii) In the case of a tire marketed under a brand name, the annual domestic purchase or importation into the United States by a brand name owner of tires of the same design and size as the tire does not exceed 15,000 tires;
- (iii) The tire’s size was not listed as a vehicle manufacturer’s recommended tire size designation for a new motor vehicle produced in or imported into the United States in quantities greater than 10,000 during the calendar year preceding the year of the tire’s manufacture; and
- (iv) The total annual domestic production or importation into the United States by the tire’s manufacturer, and in the case of a tire marketed under a brand name, the total annual domestic purchase or purchase for importation into the United States by the tire’s brand name owner, of tires meeting the criteria of paragraphs (c)(2)(i), (ii), and (iii) of this section, does not exceed 35,000 tires.” 49 CFR § 575.104(c)(2).

¹¹⁶ 49 U.S.C. § 32304A(a)(3).

¹¹⁷ Docket No. NHTSA-2008-0121-0043.1 at 11.

winter-type snow tires, and space-saver or temporary use spare tires,¹¹⁸ as NHTSA interprets EISA and its UTQGS regulation, NHTSA does not have the authority under EISA to require vehicle manufacturers to display tire performance information for these specialty tires. To the extent the agency has the information, NHTSA will include information on deep tread, winter-type snow tires, and space-saver or temporary use spare tires on the tire website.

Regarding the use of tires not intended for sustained highway use in normal driving, NHTSA has historically recognized that improper operation of any tire can be dangerous. For instance, the recent “What’s your PSI” campaign and the brochure *Tire Safety: Everything’s Riding on It*, available on www.safercar.gov stress the importance of proper tire selection and maintenance.

4. Voluntary rating of tires not subject to the program

As noted above in section III.A.1 and III.A.2, EISA excludes LT tires and OE tires from the tire fuel efficiency consumer information program.¹¹⁹ Some commenters noted concerns with the exclusion of OE tires and LT tires from the EISA mandated tire fuel efficiency consumer information program.¹²⁰ For instance, Tire Rack commented that “[w]hile not required by the rulemaking, it is hoped there would be a future opportunity for tire manufacturers producing LT-sized tires to voluntarily provide rolling resistance information.”¹²¹

Agency response: NHTSA’s research included testing of LT tires even though we are not authorized to regulate them through this tire fuel efficiency consumer information program because NHTSA’s Phase 1 research was initiated in July 2006, subsequent to the release of the

¹¹⁸ 49 CFR § 575.104(c)(1).

¹¹⁹ 49 U.S.C. § 32304A(a)(3).

¹²⁰ Tire Rack Comments, Docket No. NHTSA-2008-0121-0026.1 at 2-3; ICCT Comments, Docket No. NHTSA-2008-0121-0042.1 at 2; Public Citizen et al. Comments, Docket No. NHTSA-2008-0121-0043.1 at 4.

¹²¹ Docket No. NHTSA-2008-0121-0026.1 at 2-3.

2006 NAS Report and prior to the passage of EISA.¹²² LT tires represented approximately 16.7 percent of the U.S. replacement tire market in 2007.¹²³ NHTSA notes that it expects test data to be available for many LT tires, as these tires are covered by the Europe and California programs. Nothing in this regulation would prohibit manufacturers from voluntarily rating or reporting data for LT or other excluded tires, as required for covered tires. The same would be true for other tires excluded from the tire fuel efficiency consumer information program including original equipment tires, or any other excluded tires. That is, while these tires are not required to be rated under today's final rule, NHTSA has no objection to voluntary rating by manufacturers or importers, and would include any tires voluntarily reported in its database.

5. Each different stock keeping unit must be rated

As the agency proposed in the NPRM, this final rule is requiring each different stock keeping unit (SKU), or each size within each model within each brand, to be rated separately for fuel efficiency (using a rolling resistance value), safety (using a wet traction test value), and durability (using a treadwear test value). As explained in the NPRM, tire manufacturers may have different brands, and within each brand different tire models (or tire lines),¹²⁴ and tire models are often available in different sizes. For example, Michelin is the manufacturer for the Michelin, BFGoodrich and Uniroyal brands. A popular Michelin brand model is the Pilot, but other models include the Energy or the HydroEdge. Each of these brands is available in different

¹²² Specifically, of the 25 different models of tires tested in NHTSA's Phase 1 research, 16 tire models were passenger, 9 were light truck tire models; one of the passenger car tires was the ASTM F 2493-06 P225/60R16 97S Standard Reference Test Tire (SRTT).

¹²³ Rubber Manufacturers Association, Preliminary 2008 Factbook, *see* https://www.rma.org/publications/market_information/index.cfm?CFID=23483353&CFTOKEN=70640000 (last accessed Sept. 26, 2009).

¹²⁴ For purposes of the tire fuel efficiency consumer information program, the phrase "tire line" and "tire model" can be used interchangeably. The agency will generally use the word "model" to refer to a particular line of tires.

tire sizes, for example a 185/65R14 or a 215/70R15. See Figure 2.¹²⁵ The model of tire (Pilot) then may be available in several performance levels. Figure 2 illustrates there are three different speed ratings for the Pilot model. Performance ratings may also include All-Season, Competition, Touring, Grand Touring, etc. Each of these tires may also have different treadwear, traction, temperature and warranty ratings. These models are then available in different tire sizes, for example an Exalto A/S is available in sizes 185/60R14 to 235/40R17. Similarly, a Pilot Sport A/S Plus is available in sizes 205/55R16 to 245/45R20, and the Pilot Sport PS2 is available in sizes 225/55R16 to 295/25R22.

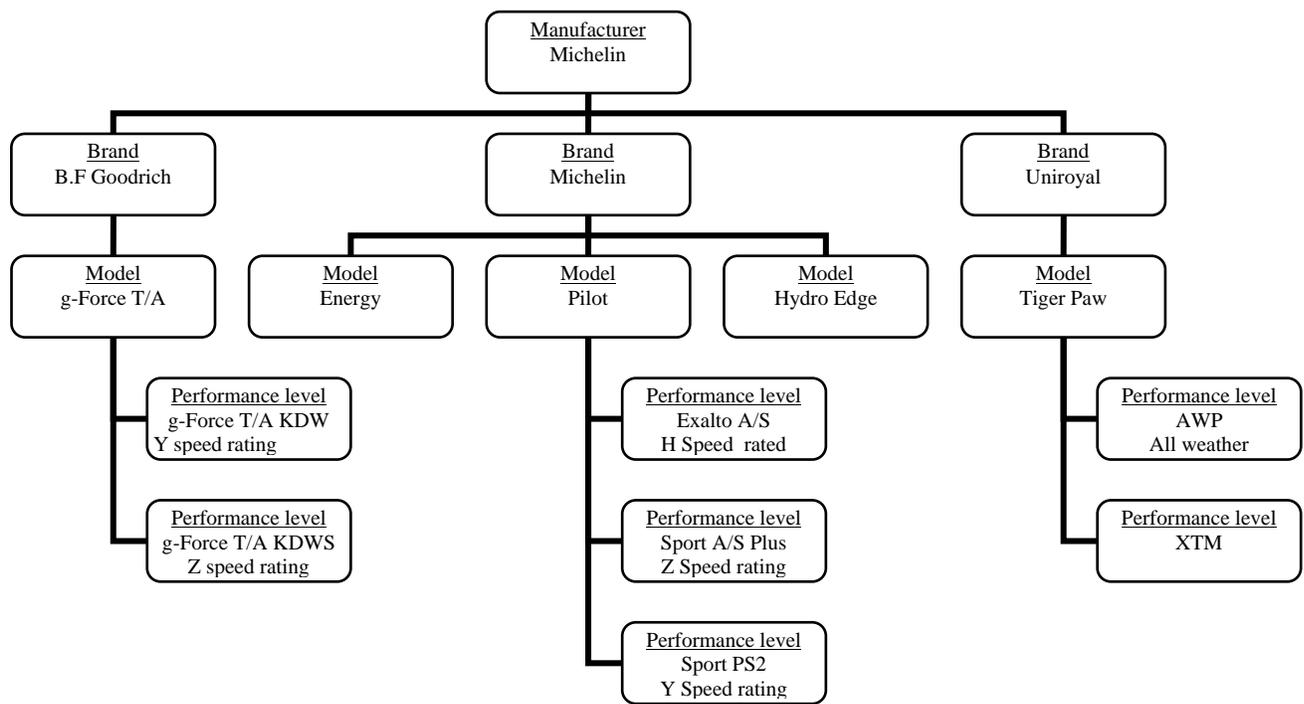


Figure 2. Example of Tire Terminology

The NPRM also explained that in passenger car tire sizes (e.g., 185/65R14), the first three numbers indicate the nominal width of the tire, i.e., the width in millimeters from sidewall edge to sidewall edge (185). In general, the larger the nominal width, the wider the tire. The second

¹²⁵ Although this figure was in the NPRM, this discussion is repeated here because the agency believes a proper understanding of the replacement tire market is key to the understanding of certain requirements of the tire fuel efficiency consumer information program.

two numbers in the size designation indicate the ratio of tire height to tire width, or the aspect ratio (65). For aspect ratio, numbers of 70 or lower indicate a short sidewall for improved steering response and better overall handling on dry pavement. The “R” indicates that this particular tire is a radial tire, as opposed to bias ply construction, which is indicated by a “D” in the size specification, or bias-belted construction, which is indicated by a “B” in the size specification. Radial ply construction of tires has been the industry standard for the past 20 years. The last two numbers in the size designation indicate the rim diameter code (14), or the wheel or rim diameter in inches. A change in any of these three numbers indicates a different size specification for a replacement tire.

Rolling resistance varies among tires of the same size. In NHTSA’s testing, tires of a size 225/60R16, but manufactured by different companies, and having various performance ratings (e.g., speed rating, all-season specification) had rolling resistance values ranging from 9.8 to 15.2 pounds.¹²⁶ Rolling resistance can also vary widely across different sized tires in a brand. In data reported by the California Energy Commission (CEC), passenger car tires of the same brand and model with different sizes ranged in rolling resistance from 7.5 to 22.8 pounds.¹²⁷ For these reasons, NHTSA is requiring each SKU, or each size within each model of each brand, to be rated separately for fuel efficiency (using a rolling resistance test value), safety (using a wet traction test value), and durability (using a UTQGS treadwear test value). Consumers researching tires should be able to compare tire models and sizes with some reliability.

Research done for the CEC to evaluate test facility capacity to conduct rolling resistance testing indicated that there are well over 20,000 different brand/model/size combinations (or

¹²⁶ See NHTSA Rolling Resistance Rating System Test Development Project: Phase 1 – Evaluation of Laboratory Test Protocols (October 2008). Docket No. NHTSA-2008-0121-0019.

¹²⁷ To examine California’s rolling resistance test data, please contact Ray Tuvell of the California Energy Commission. See http://www.energy.ca.gov/transportation/tire_efficiency/index.html (last accessed Feb. 13, 2009).

SKUs)¹²⁸ of replacement passenger car tires sold in the United States.¹²⁹ The CEC research also indicated that it could take up to 2.7 years to test one tire of each SKU once.¹³⁰ Additionally, a tire manufacturer has the ability to estimate with relative accuracy the rolling resistance test value of a tire with a given size specification if it knows the rolling resistance test value of a tire in the same model line (i.e., the ability to estimate values by interpolating or extrapolating test values for certain SKUs from knowing the actual test values of other SKUs). Tire manufacturers have this same ability to estimate UTQGS traction test values and UTQGS treadwear test values by having actual traction and treadwear test values of other, similar tires of different SKUs. For these reasons, NHTSA concludes, as the agency did in the NPRM, that it is not reasonable or necessary to require a physically-tested value of rolling resistance, traction, or treadwear test value for every combination of tire model, construction, and size (SKU). NHTSA is not requiring tire manufacturers to report a test procedure value for rolling resistance, traction, and treadwear for each different SKU, as proposed in the NPRM. NHTSA explained that a tire manufacturer would be free to reasonably estimate the test values it would report, and the agency sought comment on this approach.

¹²⁸ A SKU, or stock keeping unit, is a specific market brand and tire design and size combination. A different SKU can also be indicated by a different specified load rating or speed rating for a particular tire. Specifically, NHTSA will define stock keeping unit as “the alpha-numeric designation assigned by a manufacturer to uniquely identify a tire product. This term is sometimes referred to as a product code, a product ID, or a part number.” See the Regulatory Text section at the end of this notice.

¹²⁹ The CEC research estimated 20,708 different replacement passenger car tire SKUs and 3,296 replacement LT tire SKUs. This research was done by Smithers Scientific Services, Inc. (Smithers) and was presented at a CEC staff workshop on February 5, 2009. This presentation is available through the CEC’s website and was also posted to the NPRM docket. See http://www.energy.ca.gov/transportation/tire_efficiency/documents/index.html (last accessed Sept. 28, 2009); Docket No. NHTSA-2008-0121-0007.

¹³⁰ The Smithers’ research conducted for CEC was estimating various scenarios for testing three of each different replacement passenger *and* LT tire SKU (because California’s tire fuel efficiency program covers passenger car and LT replacement tires). The eight different scenarios varied workdays per year, percent capacity available, and hours per day of test operation. Based on estimates of test capacities, the CEC research estimated average test years required to test three tires of each SKU to be between 0.7 and 8.2 years. Thus, for the purposes of testing one of each different replacement passenger car tire SKU, we estimate this would take a maximum of 8.2 / 3 years, or 2.7 years.

Interpolation versus required testing: RMA commented that it supports the ability for tire manufacturers to provide predicted (interpolated) tire ratings.¹³¹ RMA stated that tire manufacturers routinely develop and utilize accurate computer models to predict tire performance of tires not physically tested, using proprietary information about tire chemistry, design, construction, and test data available for similar tires. RMA commented that permitting interpolation-based ratings would allow a tire manufacturer to efficiently rate affected tires while minimizing costs. RMA recommended that NHTSA modify the regulatory text to make clear that interpolation is acceptable as a basis for tire ratings.

NRDC, Ford, and Alan Meier each expressed concern with NHTSA's proposal to allow manufacturers to report a tire's ratings without running a test. NRDC commented that requiring tire manufacturers to submit actual test values would ensure that reported data is accurate and not requiring actual testing threatens to undermine the rating system credibility and the program's effectiveness.¹³² Further, NRDC stated that not specifying a limit on the number of SKUs that can be reported with estimated, non-tested values would overburden NHTSA's compliance testing obligation, which they call NHTSA's only accurate validation mechanism. Ford stated that it did not support interpolating test values from one tire to another because of potential significant differences in tire construction from one tire to another, even within a tire line.¹³³ Alan Meier of the University of California, Davis argued that requiring a direct measurement of each tire is a vital element of the program because a measurement for each tire model is essential for the credibility of any information system.¹³⁴ Mr. Meier also stated that only if NHTSA could substantiate and verify the idea that test values can be accurately interpolated should a simulation

¹³¹ RMA Comments, Docket No. NHTSA-2008-0121-0036.1 at 12.

¹³² NRDC Comments, Docket No. NHTSA-2008-0121-0040.1 at 2, 4.

¹³³ Ford Comments, Docket No. NHTSA-2008-0121-0038.1 at 3.

¹³⁴ Alan Meier Comments, Docket No. NHTSA-2008-0121-0037.1 at 1-2.

model be allowed. Similarly, Consumers Union commented that NHTSA should require a standard statistical process and corresponding sample size for verifying that the assigned test value is determined with sufficient significance that no production tire will exceed the maximum test value assigned.¹³⁵

Agency response: As an initial point, as discussed in section VII.B.2 below, NHTSA is not requiring tire manufacturers to report test values to the agency, but merely the actual ratings it is assigning to each tire SKU. The agency will continue to not require any amount of actual testing in the regulations for this rating program. First, EISA does not require particular tests. Second, as noted above, a tire manufacturer has the ability to estimate with relative accuracy the test values of a tire with a given size specification if it knows the test value of a tire in the same model line. NHTSA agrees with RMA's understanding of the industry that tire manufacturers routinely develop and utilize accurate computer models to predict tire performance of tires not physically tested, using information available for similar tires. Additionally, the CEC research discussed above indicates that requiring testing of all tire SKUs would cause a significant delay in the implementation of this program and would increase the cost burden of this regulatory program on tire manufacturers unnecessarily.

Finally, not specifically requiring testing is consistent with the enforcement mechanism known as "self certification," which was established by statute for Federal motor vehicle safety standards,¹³⁶ and is the process NHTSA follows to ensure compliance with its other programs and regulations as well. Under self certification, the burden for ensuring that all new vehicles and equipment (e.g., tires) comply with federal regulations is borne by the manufacturer. NHTSA does not perform any pre-sale testing, approval, or certification of vehicles or

¹³⁵ Consumers Union Comments, Docket No. NHTSA-2008-0121-0034 at 2.

¹³⁶ 49 U.S.C. § 30115.

equipment, whether of foreign or domestic manufacture, before introduction into the U.S. retail market. To ensure compliance with agency regulations, NHTSA randomly tests certified vehicles or equipment (in accordance with the test procedures laid out in the regulations) to determine whether the vehicles or equipment fails to comply with applicable standards. For such enforcement checks, NHTSA purchases vehicles and equipment and tests according to the procedures specified in the standards. If the vehicle or equipment passes the test, no further action is taken. If the vehicle or equipment fails, NHTSA has the authority to request additional information from the manufacturer on the basis for certification and to assess civil penalties for any confirmed violation.¹³⁷

Neither EISA (nor other statutes NHTSA administers) nor NHTSA standards and regulations require that a manufacturer base its certifications (or ratings) on any particular tests, any number of specified tests or, for that matter, any tests at all. A manufacturer is required to exercise due care in certifying its tires. It is the responsibility of the tire manufacturer to determine initially what test results, computer simulations, engineering analyses, or other information it needs to enable it to certify that its tires comply with applicable Federal safety standards. The enforcement of the UTQGS rating system follows the same concept, and the rating system established under the tire fuel efficiency consumer information program will do the same.

For instance, the UTQGS do not require that manufacturers test their tires at NHTSA's test track at San Angelo, Texas. Manufacturers may test their tires where they choose, and may even choose not to test their products at all. However, the specification in the UTQGS regulations that testing is done at San Angelo means that NHTSA must use that track in any

¹³⁷ See, e.g., 49 U.S.C. §§ 30165, 30166 (safety standards); 49 U.S.C. §§ 32308, 32309 (consumer information); 49 U.S.C. § 32507 (bumper standards); 49 U.S.C. §§ 32706, 32709 (odometer fraud).

compliance testing of tires. In order to protect themselves against the possibility that the agency will find a noncompliance based on testing at San Angelo and initiate an enforcement action, it would be prudent for tire manufacturers to base their assigned grades on their own testing at San Angelo or on some substitute means whose results demonstrably correlate with the results of testing at San Angelo.

Mr. Meier commented that there is considerable evidence that identical models and SKUs manufactured in different facilities (or at different times) will have significantly different rolling resistances. For this reason, Mr. Meier stated a clear and unambiguous audit trail is needed to link a manufacturer's claimed values to tires that actually exist. This is not necessary. Since NHTSA conducts annual compliance testing and could buy and test a tire at any time to compare to the ratings a manufacturer has reported to the agency, tire manufacturers are responsible for monitoring the consistency and accuracy of its ratings throughout the production run. It is in the best interest of manufacturers, thus, to establish a comprehensive quality control program to periodically test tires randomly selected to ensure the accuracy of the rating through the entire production cycle.

Therefore, consistent with self certification and in the spirit of other NHTSA standards, tire manufacturers may use their judgment to determine how many and which tires they must test to be able to accurately report rolling resistance ratings. Because this is the agency's general practice, NHTSA does not think it is necessary to make this clear in the regulatory text, as suggested by RMA. A tire manufacturer will be responsible for the accuracy of the ratings they report to NHTSA and otherwise communicate to consumers. That is, for compliance purposes, NHTSA will test any rated tire according to the test procedures specified in the regulation (regardless of whether or not the tire manufacturer has tested this tire), and if the rolling

resistance, traction, or treadwear test value falls outside of NHTSA's specified tolerance range, the agency will consider that rating a noncompliance.

Manufacturers currently rate treadwear by tire line: RMA commented that since many manufacturers currently rate tires for UTQGS treadwear by tire line, it is difficult to assess how tires would be rated for UTQGS treadwear under the proposed SKU-based rating system.¹³⁸

Agency response: Tire manufacturers will be able to use their judgment to determine how many and which tires they must test to enable them to accurately assign ratings. The manufacturer ultimately bears the responsibility for establishing ratings considering the variability of its tire line and the variability of the testing process for that category.

Notice: Lastly, RMA commented that it was unable to understand the tire selection for rating protocol due to an inconsistency between the preamble and the proposed regulatory text. RMA claimed it was unclear as to whether NHTSA is proposing that each SKU be rated, or whether each tire of a different size is to be rated. RMA stated that this inconsistency obstructed its ability to comment on which tires are to be rated for rolling resistance, and that this – along with other alleged concerns – caused RMA to be uncertain about what was being proposed or NHTSA's intent. Therefore RMA stated that it was unable to meaningfully comment on the NPRM and requested that NHTSA issue a supplemental NPRM.

Agency response: As noted by RMA in its comments, the Administrative Procedure Act (APA) rulemaking provisions require that general notice of a proposed rule must be published in the Federal Register and must include "either the terms or substance of the proposed rule or a description of the subjects and issues involved."¹³⁹ NHTSA satisfied this APA requirement in the NPRM.

¹³⁸ RMA Comments, Docket No. NHTSA-2008-0121-0036.1 at 11.

¹³⁹ 5 U.S.C § 553(b)(3).

The U.S. Court of Appeals for the District of Columbia Circuit has explained that the APA’s notice requirements “are designed (1) to ensure that agency regulations are tested via exposure to diverse public comment, (2) to ensure fairness to affected parties, and (3) to give affected parties an opportunity to develop evidence in the record to support their objections to the rule and thereby enhance the quality of judicial review.”¹⁴⁰ Thus, adequate notice and opportunity for comment exists “if it affords interested parties a reasonable opportunity to participate in the rulemaking process, and if the parties have not been deprived of the opportunity to present relevant information by lack of notice that the issue was there.”¹⁴¹ An agency NPRM “must provide sufficient detail and rationale for the rule to permit interested parties to comment meaningfully.”¹⁴²

RMA commented that the inconsistencies between the preamble and the proposed regulatory text deny RMA and other interested parties a meaningful opportunity to comment because it was difficult to understand exactly what was being proposed. NHTSA’s notice of proposed rulemaking consisted of a lengthy preamble discussion and proposed regulatory text. Courts have found sufficient APA notice where the NPRM was not entirely clear on what was being proposed, but where the NPRM at least discussed an issue such that interested parties had reason to comment on it.¹⁴³ This is the case here. RMA was on notice of the subject and issues involved. It knew the possible outcomes under discussions in the preamble to the NPRM and under the proposed regulation. It also knew that a logical outgrowth of either was possible.

¹⁴⁰ *Environmental Integrity Project v. EPA*, 425 F.3d 992, 996 (D.C. Cir. 2005) (quoting *Int’l Union, United Mine Workers of Am. v. Mine Safety & Health Admin.*, 407 F.3d 1250, 1259 (D.C. Cir. 2005)).

¹⁴¹ *American Radio Relay League v. Federal Communications Commission*, 524 F.3d 227, 236 (D.C. Cir. 2008) (citing *WJG Tel. Co., Inc. v. Federal Communications Commission*, 675 F.2d 386, 389 (D.C. Cir. 1982)).

¹⁴² *Fertilizer Institute v. EPA*, 935 F.2d 1303, 1311 (D.C. Cir. 1991) (quoting *Florida Power & Light Co. v. United States*, 846 F.2d 765, 771 (D.C. Cir. 1988)).

¹⁴³ See *Nat’l Small Shipments Traffic Conference, Inc. v. Civil Aeronautics Board*, 618 F.2d 819, 833 (D.C. Cir. 1980) (finding sufficient notice where a NPRM was not “a paragon of clarity” but the preamble implied the prohibition that was ultimately adopted in the final rule).

RMA commented that contradictions between the preamble and regulatory text means that the final rule runs a risk of not being a “logical outgrowth” of the proposed rule. “A rule is deemed a logical outgrowth if interested parties ‘should have anticipated’ that the change was possible, and thus reasonably should have filed their comments on the subject during the notice-and-comment period.”¹⁴⁴ NHTSA disagrees with RMA that NHTSA’s requirement that each SKU must be rated separately is not a “logical outgrowth” of the NPRM merely because the proposed regulatory text stated something different, i.e., that “every size designation must be rated separately.”¹⁴⁵ The preamble discussed at length why NHTSA was considering it important to require each tire SKU to be rated separately.¹⁴⁶ Further, as indicated above, many commenters had something to say about this aspect of the NPRM, which serves as evidence that the rest of the interested public was sufficiently aware of the possibility that the agency may adopt such a requirement. In fact, RMA commented on this aspect of the proposal, even though it asserted it was confused about what NHTSA was actually proposing.¹⁴⁷

Elsewhere, RMA commented that it was unable to meaningfully comment on all aspects of the proposed rule because the proposed regulations were inconsistent with the rulemaking’s preamble and are, thus, not a logical outgrowth of the preamble. With this argument RMA misapplies the “logical outgrowth” principle. As noted above, courts have established the principle that to satisfy the notice requirement under the APA, a final rule must be a “logical outgrowth” of the agency proposal. The proposal is not limited to a particular part of the NPRM.

¹⁴⁴ *Miami-Dade County v. EPA*, 529 F.3d 1049, 1059 (11th Cir. 2008) (quoting *Northeast Md. Waste Disposal Auth. v. EPA*, 358 F.3d 936, 952 (D.C. Cir. 2004)) (quotation and citation omitted); see also *First Am. Discount Corp. v. Commodity Futures Trading Comm’n*, 222 F.3d 1008, 1015 (D.C. Cir. 2000) (explaining that notice must be “sufficient to advise interested parties that comments directed to the controverted aspect of the Final Rule should have been made.”) (quotation and citation omitted).

¹⁴⁵ Tire Fuel Efficiency NPRM, *supra* note 9, at 29585.

¹⁴⁶ *Id.* at 29553-29554.

¹⁴⁷ RMA Comments, Docket No. NHTSA-2008-0121-0036.1 at 11 (commenting that since many manufacturers currently rate tires for UTQGS treadwear by tire line, it is difficult to assess how tires would be rated for UTQGS treadwear under the proposed SKU-based rating system).

As a general matter, where RMA professes confusion as to whether, for example, option A or option B was proposed in the NPRM, NHTSA has fully satisfied the APA notice requirements because even if the NPRM was ambiguous, both options were presented for comment, thus sufficiently apprising the public of the possibility that the agency was considering each option.¹⁴⁸

B. Entities subject to requirements of the program

1. Tire manufacturers

Ford commented that tire importers and private label manufacturers were not considered tire manufacturers under the proposed requirements in the NPRM but that they should be held to the same requirements.¹⁴⁹

Agency response: As noted in the NPRM, which entities are considered tire manufacturers for purposes of the tire fuel efficiency consumer information program is determined by statute. EISA codified section 111 by adding section 32304A to Chapter 323 (Consumer Information) of Part C (Information, Standards, and Requirements) of Subtitle VI (Motor Vehicle and Driver Programs) of Title 49 of the United States Code (U.S.C.). Section 32101 of Title 49 of the U.S.C. contains the definitions that are to apply to the Part C noted above. Section 32101(5) defines manufacturer as “a person (A) manufacturing or assembling passenger motor vehicles or passenger motor vehicle equipment; or (B) importing motor vehicles or motor vehicle equipment for resale.” Thus, for all sections under Part C, including section 32304A, the importer of any tire is a tire manufacturer. An importer is responsible for every tire

¹⁴⁸ In addition to the SKU/size designation confusion, RMA alleged other inconsistencies between the NPRM preamble and the proposed regulatory text including the following: inconsistent figures regarding fuel savings; NPRM is unclear about what compliance approach is proposed in the NPRM versus where comments are sought on potential alternative approaches; confusion as to whether NHTSA intends to allow tire manufacturers to estimate values or whether NHTSA intends to require the testing of all tires; using the term fuel efficiency rating and RRF rating interchangeably; and inconsistent and inadequate use of terms (i.e., citing typos). RMA Comments Appendix 3, Docket No. NHTSA-2008-0121-0036.4 at 46-50. This response is intended to respond to all of those allegations of being unable to meaningfully comment on the proposal.

¹⁴⁹ Ford Comments, Docket No. NHTSA-2008-0121-0038.1 at 2.

it imports and is subject to civil penalties in the event of any violations. The U.S. Customs and Border Protection may deny entry at the port to items that do not conform to applicable requirements.

As to private label manufacturers, NHTSA assumes that Ford is referring to when tire manufacturers produce tires under contract with private companies such as Sears, Pep Boys, Discount Tire, etc. These private entities then sell those tires under its house-brand trade names, e.g., Sears brand tires, Pep Boys brand tires, etc. NHTSA intended this regulation to treat a tire brand name owner as a manufacturer in the case of tires marketed under a brand name different from the manufacturer name. This is clear in the regulation which requires tire manufacturers and tire brand name owners to rate all replacement passenger car tires for fuel efficiency (i.e., rolling resistance), safety (i.e., wet traction), and durability (i.e., treadwear), and submit those ratings to NHTSA. In the final regulatory text, NHTSA has added a definition of brand name owner for clarity.

2. Tire retailers

When confronted with the need to replace the tires on their vehicles, consumers may choose from national internet and mail order companies, tire dealers, manufacturer outlets, or retail department stores. Typically, the tires bought in the replacement market are balanced and mounted by the tire dealer or retailer.¹⁵⁰ NHTSA proposed a definition of tire retailer to be “a person or business with whom a replacement passenger car tire manufacturer or brand name owner has a contractual, proprietary, or other legal relationship, or a person or business who has such a relationship with a distributor of the replacement passenger car tire manufacturer or brand name owner concerning the tire in question.”¹⁵¹ The agency used this language because this is

¹⁵⁰ 2006 NAS Report, *supra* note 4, at 21.

¹⁵¹ Tire Fuel Efficiency NPRM, *supra* note 9, at 29585.

how Part 575 of Title 49 of the Code of Federal Regulations (CFR) refers to the locations where tires are offered for sale.¹⁵²

The National Automobile Dealers Association (NADA) commented that this proposed definition is inconsistent with references to tire retailer requirements in 49 CFR Part 574, Tire Identification and Recordkeeping, and suggested that NHTSA reconcile the terms and definitions used to address tire dealers in Part 574 and the new regulatory text.

Agency response: Although the agency believes that the proposed definition of tire retailer would encompass franchised automobile and truck dealers that sell tires, NHTSA agrees with NADA's suggestion. Part 574 requires tire retailers to distribute and report information, just as this regulation will. Accordingly, NHTSA believes that the definition of "tire retailer" in the new regulations promulgated today should be consistent with that of Part 574. Thus, consistent with Part 574, this final rule defines tire retailer to mean a dealer or distributor of new tires and adds the following definitions of dealer and distributor:

Dealer means a person selling and distributing new motor vehicles or motor vehicle equipment primarily to purchasers that in good faith purchase the vehicles or equipment other than for resale.

Distributor means a person primarily selling and distributing motor vehicles or motor vehicle equipment for resale.

As mentioned above, NATM commented they did not believe Congress intended to include replacement tires sold for use on trailers to be within the scope of the tire fuel efficiency consumer information program.¹⁵³ NATM explained that some of its trailer manufacturer, trailer dealer, and trailer-parts distribution members sell "P" tires to consumers for replacement use on

¹⁵² See 49 CFR § 575.6(c).

¹⁵³ Docket No. NHTSA-2008-0029.1.

light-duty trailers, particularly small utility trailers. NATM believes that NHTSA's proposed definition of passenger car tire could be read to include those replacement "P" tires sold by NATM members for use on light-duty trailers. NATM stated that the proposed tire retailer definition may be read to encompass trailer retailers who offer a tire for sale and have a legal relationship with businesses defined in the rule as replacement car tire manufacturers, but that EISA does not contemplate subjecting these trailer retailers to the rule's requirements.

Agency response: As explained above, NHTSA concludes that all passenger car tires, even those sold for use on other vehicles, must have the information provided by the tire manufacturer. However, we agree that dealers that sell passenger car tires only for use on trailers should not be considered tire retailers for this program, since EISA did not mandate a tire fuel efficiency consumer information program to educate consumers about replacement tires for trailers. Accordingly, NHTSA is modifying the definition of tire retailer as suggested by NATM to be in terms of the purpose of the sale of the tire. Today's final rule defines tire retailer to mean "a dealer or distributor of new replacement passenger car tires sold for use on passenger cars, multipurpose passenger vehicles, and trucks, that have a gross vehicle weight rating (GVWR) of 10,000 pounds or less." A retailer that sells tires only for use on trailers would not be within this definition.

C. EISA does not give NHTSA authority to establish a rolling resistance performance standard for replacement passenger car tires

A few commenters urged NHTSA to consider establishing a maximum rolling resistance standard that would prohibit sale of the worst rolling resistance tires.¹⁵⁴ The European Union has adopted a maximum rolling resistance standard and California's fuel efficient tire program

¹⁵⁴ Public Citizen et al. Comments, Docket No. NHTSA-2008-0121-0043.1 at 11; ExxonMobil Chemical Company Comments, Docket No. NHTSA-2008-0121-0044.1 at 10; Michelin North America Comments, Docket No. NHTSA-2008-0121-0043.1 at 6.

requires that the CEC consider whether to adopt standards for replacement tires to ensure that replacement tires are at least as energy efficient as original equipment tires.¹⁵⁵ As estimated by ExxonMobil, the reduction in the average rolling resistance of replacement tires that would result from such a maximum rolling resistance standard would increase on-road fuel economy obtained in motor vehicles and, thus, result in fuel savings (and GHG reductions).¹⁵⁶

Agency response: Such a standard is not within the scope of the new authority granted to NHTSA under EISA. EISA mandates NHTSA must “promulgate rules establishing a national tire fuel efficiency consumer information program for replacement tires ... to educate consumers about the effect of tires on automobile fuel efficiency, safety, and durability.”¹⁵⁷ NHTSA cannot interpret the mandate to establish a consumer information program as providing it with the authority to regulate the fuel efficiency of replacement tires.

IV. Rolling resistance test procedure

A. Test procedure

As in the NPRM, today’s final rule specifies that tire manufacturers must rate the fuel efficiency of their tires. To test for compliance with this requirement, NHTSA will use rolling resistance force measurements that would be achieved using the recently finalized test procedure ISO 28580:2009(E), Passenger car, truck and bus tyres – Methods of measuring rolling resistance – Single point test and correlation of measurement results.¹⁵⁸ Today’s final regulations further specify that NHTSA will conduct the ISO 28580 test procedure using certain methodology and equipment options available in the test procedure as further discussed below.

¹⁵⁵ Cal. Pub. Res. Code § 25772.

¹⁵⁶ Docket No. NHTSA-2008-0121-0044.1 at 10.

¹⁵⁷ 49 U.S.C. § 32304A(a)(1). EISA states what that rulemaking must include: (1) a tire fuel efficiency rating system for replacement tires; (2) requirements for providing information to consumers; (3) specifications for test methods for manufacturers to use in assessing and rating tires; and (4) a tire maintenance consumer education program. *Id.* at 32304A(a)(2).

¹⁵⁸ See http://www.iso.org/iso/iso_catalogue/catalogue_tc/catalogue_detail.htm?csnumber=44770 (last accessed Sept. 24, 2009).

As explained above, rolling resistance is simply the manifestation of all of the energy losses associated with the rolling of a tire under load.¹⁵⁹ Accordingly, in a laboratory, rolling resistance is measured by running a tire under load on a test wheel (referred to as “roadwheel”). At constant speed, the energy consumed by the rolling tire is directly proportional to the reaction forces in the form of torque on the roadwheel, or force on the axle. These forces are then used to calculate the forces at the tire-roadwheel interface. The less force, the less energy converted to heat and, thus, the more fuel efficient the tire.

As discussed in the NPRM, NHTSA examined five test methods to measure rolling resistance of light vehicle tires (Phase 1 Research).¹⁶⁰ The choice of which test procedure to specify for measuring rolling resistance is important because measuring rolling resistance requires precise instrumentation, calibration, speed control and equipment alignment for repeatable results. As explained in detail in the NPRM, agency research shows that all of the available test procedures could meet these requirements. Among these, the ISO 28580 test procedure is one of the preferred test procedures because, unlike some other, it evaluates a tire’s rolling resistance at a single combination of load, pressure, and speed (i.e., a single-point test method). A single-point test method is sufficient for rating tires against each other yet is less costly to conduct than a multi-point test method. For additional detail on NHTSA’s Phase 1 Research and background on the test equipment and methodologies used to measure rolling resistance, see the NPRM.¹⁶¹

The ISO 28580 test procedure is also unique because it specifies a procedure to correlate results between different test equipment (i.e., different rolling resistance test machines), which

¹⁵⁹ National Highway Traffic Safety Administration, *The Pneumatic Tire*, DOT HS 810 561, at 483 (February 2006).

¹⁶⁰ See NHTSA Rolling Resistance Rating System Test Development Project: Phase 1 – Evaluation of Laboratory Test Protocols (October 2008). Docket No. NHTSA-2008-0121-0019.

¹⁶¹ Tire Fuel Efficiency NPRM, *supra* note 9, at 29555-29559.

our research shows is a significant source of variation. Because other established test methods lack such a procedure, NHTSA would need to develop a new procedure to address this variation before any of those test methods could be required.¹⁶² As mentioned above, EISA mandates that this rulemaking include “specifications for test methods for manufacturers to use in assessing and rating tires to avoid variation among test equipment and manufacturers.”¹⁶³ Further, the ISO 28580 test procedure is the specified test method in the proposed European Union Directive and the California draft staff regulation, allowing manufacturers to do one test to determine ratings for both proposed regulations.

NHTSA’s proposed regulations included the specification of only two of four energy loss measurement methods, as well as the use of a 1.7-meter indoor roadwheel with a grit surface, as opposed to a bare steel roadwheel. All four force measurement methods are permitted under ISO 28580, as is testing on roadwheels with diameters greater than 1.7 meters using either roadwheel surface.

Many commenters misinterpreted the specification of two particular methods by NHTSA, the roadwheel diameter, and the specification of the grit surface as indication that we were proposing to prohibit the other options allowed under ISO 28580. These commenters stated that they support “full adoption” of the ISO 28580 test procedure.¹⁶⁴ This indicates a misunderstanding of the purpose of NHTSA’s regulations and of NHTSA’s enforcement mechanism generally. The procedures specified in NHTSA’s standards and regulations specify

¹⁶² Since there was development and validation of the ISO 28580 lab alignment procedure, NHTSA believes that using ISO 28580 with its lab alignment procedure is preferable to developing a new lab alignment process from scratch. See Transcript of Staff Workshop Before the California Energy Resources Conservation and Development Commission, at 104 (April 2009), available at http://energy.ca.gov/transportation/tire_efficiency/documents/2009-04-08_workshop/2009-04-08_TRANSCRIPT.PDF (last accessed Nov. 11, 2009).

¹⁶³ 49 U.S.C. § 32304A(a)(2)(C).

¹⁶⁴ Tire Rack Comments, Docket No. NHTSA-2008-0121-0026.1 at 1; European Commission Comments, Docket No. NHTSA-2008-0121-0028.1 at 2; JATMA Comments, Docket No. NHTSA-2008-0121-0031.1 at 2-3; Consumers Union Comments, Docket No. NHTSA-2008-0121-0034 at 2; RMA Comments, Docket No. NHTSA-2008-0121-0036.1 at 8-9; Michelin Comments, Docket No. NHTSA-2008-0121-0048.1 at 2-3.

the precise procedures NHTSA will follow when conducting enforcement checks. As explained above in section III.A.5, this enforcement approach does not require that a manufacturer base its certifications (or ratings) on any particular tests, any number of specified tests or, for that matter, any tests at all. A manufacturer is only required to exercise due care in certifying its tires. It is the responsibility of the tire manufacturer to determine initially what test results, computer simulations, engineering analyses, or other information it needs to enable it to certify that its tires comply with applicable Federal standards.

NHTSA has selected specific sections of ISO 28580 to allow compliance testing in the United States on existing independent laboratory equipment. Also, specifying the equipment and variant of testing NHTSA will use for compliance testing provides users of other equipment or variants of testing with a better known target for comparison of their testing. Therefore adopting only part of the specification does not hinder companies from using “in-house” equipment of another design that meets the ISO 28580 specification. ISO 28580 has more provisions available for testing based on worldwide equipment availability and therefore has set specifications and procedures to permit using all the different types of equipment and test variants. NHTSA, therefore, agrees with commenters who call for full adoption of ISO 28580 as a global test procedure. Equipment and test variants once aligned using the provisions in ISO 28580 can be compared. Therefore correlations can be established by the users of the other types of equipment to the type of equipment and test variants used by NHTSA.

For example, NHTSA agrees with the comment that both the bare steel roadwheel and 80 grit surface are scientifically equivalent.¹⁶⁵ As alignment and correlation procedures are available in ISO 28580 testing on bare versus the grit, force measurements can be corrected to

¹⁶⁵ However, ISO 28580 indicates that the skim test reading accuracy can be improved by use of a “textured” (i.e., grit) roadwheel surface. See ISO 28580:2009(E), Passenger car, truck and bus tyres – Methods of measuring rolling resistance – Single point test and correlation of measurement results, section 5.1.2, Surface.

report the same. NHTSA suggested grit as the surface for compliance testing so that companies would know exactly what they need to compare their result against. Companies testing on a bare roadwheel can develop correlations to adjust the numbers they report. The agency is specifying the use of an 80-grit surface on the roadwheel used in its compliance testing, instead of a bare steel roadwheel. The grit surface is the most common surface used in the laboratories available to NHTSA. NHTSA in its research found that the use of the 80-grit surface produced a slightly higher test measurement than using the bare steel surface. However, there was some evidence of potential problems for smooth steel-surfaced roadwheels in NHTSA Phase 1 testing.¹⁶⁶ In that testing, the rolling resistance of deep-lug tires exhibited a relatively linear behavior on grit surfaces over a range of test loads but dropped off consistently at high loads on smooth steel roadwheels. Since the discrepancy in results between a smooth and steel roadwheel could lead to rating compliance disputes, today's final rule specifies the use of the grit surface since it was found to be more repeatable and is the most common surface in the laboratories available to NHTSA.

Similarly, test equipment available in the United States at this time for compliance testing is limited to 1.7-meter rolling resistance test machines that use the force or torque measurement method. ISO 28580 has configured the alignment and correlation processes to take into account differences in roadwheel size and measurement methods. As alignment and correlation procedures are available, testing on a 2.0-meter roadwheel, or with the power or deceleration measurement methods, can be corrected to report the same values as measured using the force or torque methods on a 1.7-meter roadwheel. NHTSA suggested force or torque for compliance testing so that companies would know exactly what they need to compare and correlate the result against. With the machine tolerance, calibration, and alignment procedures specified in ISO

¹⁶⁶ We note that these wheels did not have the micro-texture required by ISO 28580 for steel-surfaced roadwheels.

28580, NHTSA has confidence that correlations can be made with the power and deceleration methods.

Commenters generally supported adoption of the ISO 28580 test procedure.¹⁶⁷ However, MTS, a tire test equipment manufacturer, questioned a single-point test (as opposed to a multi-point test)¹⁶⁸ and the use of a curved test surface. As for ISO 28580 being a single point test, MTS commented that a single reading for one tire is a small sample size and there is no corroborating data to provide assurance the test value is truly representative of the tire.¹⁶⁹ As RMA pointed out and as NHTSA explained in the NPRM, research conducted by both NHTSA and the CEC show that both single point and multi point tests can accurately produce tire rolling resistance data and that tires tested using either type of test procedure rank order the same for those conditions. Equations were derived to accurately convert data from any one test to the expected data from any other test at a single load and pressure. NHTSA's research has shown that both types of tests essentially produce the same rating if results are normalized as a percentage of RRF measured at each lab for the 16-inch Standard Reference Test Tire (SRTT), the ASTM F 2493.¹⁷⁰ Single-point tests are less expensive and shorter than multi-point test methods. Additionally, with single-point tests, data from any method can be correlated to data

¹⁶⁷ *See id.*

¹⁶⁸ The term "multi-point" refers to a method that uses more than one set of conditions to test a tire, usually varying speed, pressure, and/or load. Passenger car and light truck tires generally have different test conditions and can have even a different number of test points in the set of conditions. The goal of multi-point testing is to allow the use of statistical techniques to reduce rolling resistance force measurement variability and to allow prediction of the effect of changes in inflation pressure, tire load and speed on rolling resistance force. The term "single-point" refers to a method that uses a single set of test conditions. These conditions are designed to be near the average conditions that a tire would see in its intended service.

¹⁶⁹ MTS Comments, Docket No. NHTSA-2008-0121-0027.1 at 2.

¹⁷⁰ *See* NHTSA Rolling Resistance Rating System Test Development Project: Phase 1 – Evaluation of Laboratory Test Protocols (October 2008). Docket No. NHTSA-2008-0121-0019.

from any other method. Accordingly, NHTSA still believes that a single-point, rather than a multi-point, test will better serve the purposes of this program.¹⁷¹

As for the use of a curved test surface, MTS questions the use of 1.7 and 2.0-meter test wheel machines for the ISO 28580, as opposed to their flat surface test machine because of curvature effects that result from using a curved surface to measure rolling resistance. MTS states that rolling resistance measurements made on flat surface test equipment would be more accurate measurements because flat surface test equipment more closely resembles actual usage conditions.¹⁷² NHTSA agrees that a more accurate measurement of rolling resistance force could be made using flat surface test equipment. NHTSA could not evaluate flat surface rolling resistance equipment during the research and testing as none were available in independent laboratories. Thus, NHTSA believes that the industry as a whole does not have the capacity to rate tires on a flat laboratory machine at this point in time. ISO 28580 was developed by industry experts and does have provisions for conversion from flat to the 2.0-meter curved reference surface.¹⁷³ However MTS itself questions these conversion equations. Therefore NHTSA suggested 1.7-meter as the surface for compliance testing so that companies would know exactly what they need to compare their result against.

MTS also questioned the use and meaning of capped inflation pressure. As explained in the NPRM, NHTSA Phase 1 Research examined differences resulting from the method of inflation maintenance, specifically whether inflation pressure was capped¹⁷⁴ or regulated.¹⁷⁵ The

¹⁷¹ Tire Fuel Efficiency NPRM, *supra* note 9, at 29558.

¹⁷² MTS Comments, Docket No. NHTSA-2008-0121-0027.1 at 6-9.

¹⁷³ The Clark equation to correct for the effect of diameter is an accepted approximation. Deviations from total accuracy for correction to a flat surface are introduced by differences in tire construction such as aspect ratio and stiffness of the tire construction, especially sidewalls.

¹⁷⁴ Capped inflation is achieved by inflating the tire to the required pressure prior to testing, while the tire is at ambient temperature of the test area, and then sealing the air in the tire during testing with a valve, cap or some other seal.

Phase 1 Research showed that the pressure rise in the tire during testing using a capped inflation procedure reduced the rolling resistance compared to maintaining the pressure at a constant pressure during the test. Therefore, the choice of a test that uses capped inflation pressure for some or all of the test points should provide a more accurate representation of in-service behavior. The use and definition of “capped air” is defined in ISO 28580 as follows: “The test consists of a measurement of rolling resistance in which the tire is inflated and the inflation pressure allowed to build up (i.e., “capped air”).” The purpose is to evaluate the tire and its reaction to flexing and running in the same environment as other tires as if they are on the highway.

One change that NHTSA is adding to its test procedure specified in the regulation, is that the agency must specify a break-in procedure for bias ply tires, since these tires are included within the scope of the tire fuel efficiency consumer information program.¹⁷⁶ Older tire rolling resistance standards contain an option for an additional break-in for tires that “undergo significant permanent change in their dimensions or material properties with first dynamometer test operation,” (SAE J1269/SAE J2452) which the agency interprets to apply to bias-ply or belted-bias tires. Modern radial tire designs, which constitute over 99 percent of the current replacement passenger tire market, have sufficient dimensional stability to not require the optional break-in.¹⁷⁷ The greater dimensional stability of radial tires is a result of their construction with inextensible belts. Similarly, bias-belted tires are dimensionally stable due to their construction with inextensible belts. The body ply materials have been improved to

¹⁷⁵ Regulated inflation pressure is achieved by inflating the tire to the required pressure independent of its temperature, and maintaining this inflation pressure during testing. This is usually performed by using a regulated air (gas) supply external to the spindle, or axle, and connected with a low friction rotary union.

¹⁷⁶ In tire size terminology, bias ply construction is indicated by a “D” in the size specification, as opposed to an “R” in a tire size specification, which indicates that a particular tire is a radial tire. Radial ply construction of tires has been the industry standard for the past 20 years.

¹⁷⁷ See National Highway Traffic Safety Administration, *The Pneumatic Tire*, DOT HS 810 561, at 80 (February 2006).

enhance the overall dimensional stability of tires. Therefore, the dimensional stability of bias-construction tires depends upon the body-ply fabric used in their construction. Nonetheless, the agency must establish provisions for bias-construction tires that may use less dimensionally stable fabric technologies since bias ply tires are covered under the scope of the tire fuel efficiency consumer information program.

The break-in procedure we are specifying for bias ply tires is one that is found in FMVSS No. 109, New Pneumatic and Certain Specialty Tires, and FMVSS No. 139, New Pneumatic Tires for Light Vehicles.¹⁷⁸ However, we are specifying that the roadwheel break-in need only be for one hour, as opposed to two hours as in FMVSS Nos. 109 and 139, because one hour is found to be generally sufficient to achieve initial break-in and achieve thermal stabilization.¹⁷⁹ We do not believe that ISO 28580 was developed with bias ply tires in mind. Radial ply construction of tires has been the industry standard for the past 20 years. However, bias ply tires do still exist and are included within the statutorily defined scope of the tire fuel efficiency consumer information program. Therefore, the agency's test procedure must specify how we would test bias ply tires.

B. Lab alignment procedure

As discussed in the NPRM, some of the technical challenges involved in selection of a test procedure to measure rolling resistance include specifying a test method that avoids variation among laboratories/machines. NHTSA's Phase 1 Research evaluation indicated that all five of the rolling resistance test methods had very low variability and could be cross-correlated to

¹⁷⁸ See 49 CFR § 571.109, S5.5.1, S5.5.2, S5.5.3; 49 CFR § 571.139, S6.2.1.2.

¹⁷⁹ See National Highway Traffic Safety Administration, *The Pneumatic Tire*, DOT HS 810 561, at 500 (February 2006).

provide the same information about individual tire types.¹⁸⁰ There was a significant and consistent difference in the data generated by the two laboratories/machines used in NHTSA's Phase 1 Research. Therefore, development of a method to account for lab-to-lab variability is required.

One significant difference between ISO 28580 and the other test methods is that ISO 28580 includes a procedure which uses two reference tires to correlate any laboratory/machine to a reference rolling resistance test machine ("Reference Machine"). NHTSA's research showed a significant difference between the two laboratories' machines used, and therefore addressing this variation is a significant advantage for the ISO standard. Use of any other rolling resistance test procedure would have required NHTSA to develop its own procedure to address lab-to-lab variation, which would also necessitate the specification of a reference rolling resistance test machine.

Reference machine: As commenters points out, under ISO 28580, use of the lab alignment procedure requires the specification of a "Reference Machine" against which other machines will align their measurement results.

Because the ISO has not yet specified a Reference Machine for the ISO 28580 test procedure, NHTSA must specify this machine so that tire manufacturers know which test machine they must correlate their test results against. In the near future NHTSA will announce

¹⁸⁰ For this program, each manufacturer will "self-certify" the ratings for its tires. The test procedure specified in this proposal is what NHTSA will use for compliance testing. Even if rolling resistance test data were gathered using other test methods, NHTSA's research shows that equations can translate the data to the test procedure specified in this rule.

one or more private laboratories to operate the Reference Machine.¹⁸¹ The selected reference laboratory or laboratories will meet the conditions for a reference machine specified in ISO 28580, and may be required to meet other conditions specified by NHTSA.¹⁸² The agency is working expeditiously to establish and implement procedures for the selection of a reference laboratory or laboratories to operate the Reference Machine(s).¹⁸³

In order for other test machines to align with the reference laboratory or laboratories, the reference laboratory will test two alignment tires in accordance with ISO 28580 test procedures, and convey the tires to the testing laboratory with the data produced during the testing of those tires. The specification of specific alignment tires is discussed immediately below.

Alignment tires: Under the ISO 28580 lab alignment procedure, laboratories seeking to correlate its machines' results with the Reference Machine would use sets of two alignment tire models, for which ISO 28580 also specifies requirements, as discussed below.¹⁸⁴ These alignment tires ("Lab Alignment Tires," or LATs) are used to align other "candidate" machines with the Reference Machine by comparing the measured rolling resistance results for those tires measured on the candidate machine to their stated values measured on the Reference Machine.

An alignment formula is then established and is used to translate the results obtained on a

¹⁸¹ It is not the intent of NHTSA to unilaterally establish the reference machine for ISO or other global regions. Rather, the agency must define a "regional" reference machine for the tire fuel efficiency consumer information program that is independent of entities we regulate and is accessible to the agency by standard contractual mechanisms. This will allow reporting under the program and agency compliance testing that meet the requirements of EISA. It is our understanding that the output of a given "candidate" machine can be corrected using different correlation equations and therefore different entities/rating systems could also designate their own reference machines.

¹⁸² See ISO 28580:2009(E), Passenger car, truck and bus tyres – Methods of measuring rolling resistance – Single point test and correlation of measurement results, section 10.2, Conditions for reference machine.

¹⁸³ If NHTSA selects more than one private laboratory to operate the "Reference Machine," the agency would work with those laboratories to implement a program that would establish initial correlations between the machines, and that would continuously monitor the variability in the correlation between the two machines.

¹⁸⁴ See ISO 28580:2009(E), Passenger car, truck and bus tyres – Methods of measuring rolling resistance – Single point test and correlation of measurement results, section 10.4, Alignment tyre requirements. In the ISO 28580 test procedure, rolling resistance test machines other than the Reference Lab machine are referred to as "candidate machines."

candidate machine into results aligned with the Reference Machine. Since the requirements for LATs are specified in ISO 28580, but specific sizes or models of LATs are not specifically identified, NHTSA must specify which LATs tire manufacturers should use to align other rolling resistance machines to the Reference Machine.

The agency has been aware that ISO has been working to certify two passenger car alignment tire models, and when completed, the identity and a source for procurement by interested rolling resistance laboratories would be promulgated in a technical report to ISO 28580. In its NPRM comments, RMA noted that tires that qualify as LATs under ISO 28580 would be available by the end of 2009. However, in January 2010, the ISO Technical Committee 31 Working Group 6 Convenor notified NHTSA and other interested parties by memo of the identity and source for the tires that it intends to certify as LATs under ISO 28580, but that its official promulgation by technical report has been delayed until June 2010.¹⁸⁵

Since specifications and source of supply for these LATs has not yet been officially promulgated by ISO, NHTSA will postpone the specification of LATs to a later date. NHTSA will address available LAT options in the forthcoming supplemental NPRM relating to the consumer information requirements and consumer education portions of the program.

During the development of this final rule, NHTSA did consider the option of specifying existing reference tires as LATs for purposes of NHTSA's tire fuel efficiency consumer information program. However, the agency determined that specifying existing reference tires as LATs was not the optimal approach. NHTSA examined three established and widely available

¹⁸⁵ This memo will be placed in the final rule docket.

ASTM reference tires, as shown in Table 2.¹⁸⁶ These reference tires are widely used for monitoring a wide variety of tire performance measurements, but the agency has no knowledge of them having been used as a standard or reference tire for tire rolling resistance testing.

As noted above, ISO 28580 specifies requirements for LATs in section 10.4, Alignment tyre requirements. These specifications are as follows:

- (1) RRC values of the two LATs must have a minimum range of 3 Newtons per Kilonewton (N/kN).
- (2) The LAT section width¹⁸⁷ should be less than or equal to 245 millimeters (mm).
- (3) The LAT outer diameter should be between 510 mm and 800 mm.
- (4) Load index values of the two LATs should adequately cover the range for the tires to be tested, ensuring that the RRF values of the LATs also cover the range for the tires to be tested.

Table 2. ASTM Reference Tires

Tire	ASTM E 501	ASTM E 1136	ASTM F 2493
Tire Description	G78 15 Bias/belted grooved tire used for traction monitoring	P195/75R14 for monitoring performance including treadwear, and snow traction	P225/60R16 “modern” radial tire proposed for performance monitoring
Section width:	212 mm	196 mm	228 mm
Outer diameter:	648 mm	648 mm	676 mm
Load Index	Unknown ¹⁸⁸	92	97
RRF, lbf	19	11	12
RRC, N/kN	14.8	9.8	9.3

¹⁸⁶ Reference tires are specially designed and built to American Society for Testing and Materials (ASTM) standards to have particularly narrow limits of variability. For instance, the designation “F 2493” refers to the standard specification of materials and construction practices codified by ASTM as suitable for control tires for scientific experimentation.

¹⁸⁷ A tire’s section width (the measurement in millimeters from the widest point of a tire’s outer sidewall to the widest point of its inner sidewall) is indicated by the first three numbers of a tire’s size designation.

¹⁸⁸ This tire is not rated by Load Index, however the maximum sidewall load of 1620 pounds is similar to a 97 Load Index.

All three ASTM reference tires satisfy the above ISO 28580 LAT specifications for section width and outer diameter. As for the first and fourth specifications above, the RRF values of the ASTM E 501 and ASTM E 1136 tires cover the middle portion of the range of RRF values of the tires to be rated under this program, and their load index values are similar, both of which seem to run contrary to the intent of the fourth ISO 28580 alignment tire criterion listed above.

Additionally, the properties that are specified and reportedly tightly controlled in the three ASTM reference tires are meant to provide repeatable results in traction, treadwear, and like tests. This does not necessarily assure that the tires will have good repeatability for rolling resistance, which is not explicitly controlled for in their specifications and is a product of many different facets of a tire's design and construction. Therefore, the agency is investigating how tightly specified and controlled the rolling resistance properties are in the proposed ISO Alignment Rolling Resistance Reference Tire (ARRRT) models (LATs), which the agency will confirm with independent testing. For these reasons, in the agency's expert judgment, it is preferable to postpone the specification of LATs under the tire fuel efficiency consumer information program, in the hopes that ISO finalizes the specification of rolling resistance alignment tires in the anticipated timeframe, rather than specifying a pair of existing reference tires that were not developed specifically to be rolling resistance LATs.

As indicated above, reference tires specifically designed for use as rolling resistance LATs are expected to be widely available in the near future. The agency believes this will occur on a timeline that will allow NHTSA to address available LAT options in the forthcoming supplemental NPRM relating to the consumer information requirements and consumer education portions of the program, and the agency will do so at that time.

V. Rolling resistance rating metric

The output of the rolling resistance test machines is used to calculate the rolling resistance force (RRF) in pounds of force (lbf) or Newtons (N) at the interface of the tire and drum, or the force at the axle in the direction of travel required to make a loaded tire roll. Rolling resistance is often expressed and reported in terms of Rolling Resistance Coefficient (RRC) (N/kN, kg/tonne, lbf/kip), which is the rolling resistance force divided by the test load on the tire.¹⁸⁹ Since rolling resistance changes with the load on the tire, this makes direct comparisons between the tires tested at different loads difficult. The pending European rating system uses RRC as the metric for a rolling resistance rating/score. In the NPRM, NHTSA proposed to base the tire fuel efficiency rating on the RRF metric. NHTSA had tentatively concluded that a rating based on RRF is more descriptive and would provide more information to consumers, than a rating based on RRC.

Tire Rack and ExxonMobil commented that RRF is the appropriate metric since it directly relates to the tire's contribution to vehicle fuel consumption.¹⁹⁰ Tire Rack commented that RRF is the most intuitive value available to educate consumers about the influence tires have on vehicle fuel consumption because tire RRF is directly related to the energy required to maintain a vehicle in motion and offers a scale that can be applied to all tires within the rulemaking's scope. Michelin, although it expressed support for RRC, stated that NHTSA was correct that RRF is more directly related to fuel consumption.¹⁹¹ Consumers Union expressed support for using RRF as the fuel efficiency rating metric and commented that RRF is

¹⁸⁹ Most test procedures specify test load as a percentage of the maximum load rating of the tire being tested. For example, the ISO 28580 test procedure specifies a load of 80% of the maximum sidewall load.

¹⁹⁰ Tire Rack Comments, Docket No. NHTSA-2008-0121-0026.1 at 1; ExxonMobil Chemical Company Comments, Docket No. NHTSA-2008-0121-0044.1 at 2, 9.

¹⁹¹ Michelin Comments, Docket No. NHTSA-2008-0121-0048.1 at 4.

appropriate for comparing tires of the same size, load index, and speed rating designation.¹⁹²

Consumers Union also pointed out that it is the metric that is consistent with California's proposed regulations. ExxonMobil explained that because RRC is RRF divided by the test load (generally 80 percent of the maximum load rating for the tire), RRCs can only be compared within a single load rating/tire size. ExxonMobil further noted that since larger tires generate more rolling resistance and have greater test loads, the resulting RRCs for those tires can sometimes be lower than those of smaller tires (i.e., they would get a higher fuel efficiency rating than the small tire in a rating system based on RRC).¹⁹³

MTS, the European Commission, JATMA, RMA, NRDC, GM, and Michelin supported basing the fuel efficiency rating on RRC. RMA, Michelin, and GM commented that they support basing a rolling resistance rating on RRC because using RRF will cause the ratings for tires available to a consumer (i.e., those of the same size) to be clustered. They state that because RRF is an absolute rating, ratings for small tires will be clustered around high ratings, ratings for large tires will be clustered around low ratings.¹⁹⁴ These commenters stated that consumers may be discouraged to find no highly-rated tires for large vehicles. They contend that RRC would spread out all ratings for tires available to a single consumer so that they would be able to get a top rated tire.

MTS and Michelin commented that a fuel efficiency rating system based on RRF yields an artificial advantage for the lower load index tire.¹⁹⁵ These commenters noted that RRF will tend to rank tires with less load capacity higher than tires with high load capacity and that a

¹⁹² Consumers Union Comments, Docket No. NHTSA-2008-0121-0034 at 2.

¹⁹³ ExxonMobil Chemical Company Comments, Docket No. NHTSA-2008-0121-0044.1 at 2, 9.

¹⁹⁴ RMA Comments, Docket No. NHTSA-2008-0121-0036.1 at 3; GM Comments, Docket No. NHTSA-2008-0121-0046.1 at 3-4; Michelin Comments, Docket No. NHTSA-2008-0121-0048.1 at 3-4.

¹⁹⁵ MTS Comments, Docket No. NHTSA-2008-0121-0027.1 at 2-3; Michelin Comments, Docket No. NHTSA-2008-0121-0048.1 at 5-6.

RRC-based rating would rank tires by the relative technology applied to the tire to reduce rolling resistance. These commenters stated that this is because RRF is dependent on the load capacity of the tire, and RRC is independent from tire load carrying capacity or the size of the tire.¹⁹⁶

Commenters in support of RRC additionally noted that RRC is the metric that the European system bases its tire fuel efficiency rating system on,¹⁹⁷ and Michelin and GM stated that RRC is the industry standard for measurement of rolling resistance. The European Commission and JATMA supported RRC because they stated RRC is more appropriate to compare tires of different size and load indexes.¹⁹⁸ NRDC commented that the fact that larger tires will have lower ratings may discourage consumers from seeking fuel efficient tires for those vehicles.¹⁹⁹ Some commenters also stated that a rating based on RRF will encourage people to undersize, or purchase tires with too low of a load index.²⁰⁰

Agency response: Based on the large number of comments received on this issue, and to retain flexibility to use what the agency learns about consumer comprehension from the future consumer research, NHTSA will defer a decision on which rolling resistance metric should be used for the fuel efficiency rating and consider that matter further in the future supplemental NPRM and final rule that will finalize the consumer information and education portions of the program. However, to aid in guiding further discussion, in the FRIA we have analyzed some of

¹⁹⁶ See *id.*; GM Comments, Docket No. NHTSA-2008-0121-0046.1 at 3-4.

¹⁹⁷ MTS Comments, Docket No. NHTSA-2008-0121-0027.1 at 2-3.

¹⁹⁸ European Commission Comments, Docket No. NHTSA-2008-0121-0028.1 at 3; JATMA Comments, Docket No. NHTSA-2008-0121-0031.1 at 1.

¹⁹⁹ NRDC Comments, Docket No. NHTSA-2008-0121-0040.1 at 6-10.

²⁰⁰ MTS Comments, Docket No. NHTSA-2008-0121-0027.1 at 2-3; RMA Comments, Docket No. NHTSA-2008-0121-0036.1 at 4; RMA Comments, Appendix 6, Docket No. NHTSA-2008-0121-0036.7 at 24-25; GM Comments, Docket No. NHTSA-2008-0121-0046.1 at 3; Michelin Comments, Docket No. NHTSA-2008-0121-0048.1 at 5.

the issues addressed by commenters relating to basing a fuel efficiency rating on RRF versus RRC.²⁰¹

VI. Rating system

A. What information will the rating system convey to consumers?

1. Fuel efficiency

As explained above in section II.A, the national tire fuel efficiency rating system will communicate tire fuel efficiency information in the form of a rolling resistance rating, because rolling resistance corresponds to the amount of fuel used in the form of mechanical energy dissipated to move the tire. No commenter challenged these statements in the NPRM and no commenter suggested an alternate method by which to directly compare the fuel efficiency of replacement tires. Therefore, NHTSA still plans on basing the fuel efficiency rating of a given replacement passenger car tire on the rolling resistance force test value measured using the ISO 28580 test procedure. The form of the rating and how it will be communicated to consumers will be determined in the near future in the rulemaking to finalize the content of the required tire fuel efficiency consumer information program label.

2. Safety

i. Potential safety consequences

As noted in the NPRM, there is still a limited understanding of how tire traction, wear resistance, and rolling resistance relate to the practical outcomes of vehicle fuel consumption, crash incidence, and tire service life. One of the past concerns about rolling resistance is that traction and/or treadwear could be negatively impacted by changes made to improve rolling resistance.

²⁰¹ See FRIA, section IV. The companion Final Regulatory Impact Analysis (FRIA) to this final rule provides an analysis on the potential economic impacts of this consumer information program and is available in the docket for this final rule.

As part of the research in support of this rulemaking, NHTSA performed and analyzed additional testing with the tires that were used to evaluate the rolling resistance test methods. This testing included UTQGS traction and treadwear testing, additional wet and dry traction testing on an outdoor track, indoor dry traction and treadwear testing, and EPA dynamometer fuel economy testing.²⁰² This research, with one exception discussed below, did not show that this tradeoff is a given and must occur. However, it may cost more to maintain traction or treadwear with an improvement in rolling resistance. Commenters to the NPRM confirmed that a tradeoff in traction or treadwear need not occur to achieve higher fuel efficiency for a given tire.²⁰³

By providing information on all three parameters, a consumer could factor any possible tradeoffs between rolling resistance, traction, and treadwear, and/or cost differences between tires. That is, with all three ratings, a consumer could see whether they were opting for a decrease in traction and treadwear to gain improved fuel efficiency. Advocates agreed that because tire design and manufacture involve an interdependent relationship between fuel efficiency and durability on the one hand, and tire safety, adhesion to the roadway or traction, on the other, it is vitally important that safety information also be communicated to the public as part of any tire consumer information program.²⁰⁴

Technical literature extensively indicates that the tradeoff between fuel economy and safety performance can be significantly reduced with advanced compounding technologies, which are usually more expensive and proprietary. However, many aspects of the tire's

²⁰² See NHTSA Tire Rolling Resistance Rating System Test Development Project: Phase 2 – Effects of Tire Rolling Resistance Levels on Traction, Treadwear, and Vehicle Fuel Economy (February 2009). Docket No. NHTSA-2008-0121-0035.

²⁰³ Michelin Comments, Docket No. NHTSA-2008-0121-0048.1 at 8, NRDC Comments, Docket No. NHTSA-2008-0121-0040.1 at 7; *see also* California Energy Commission, California State Fuel-Efficient Tire Report: Volume II, 1 (2003), Docket No. NHTSA-2008-0121-0010.

²⁰⁴ Advocates Comments, Docket No. NHTSA-2008-0121-0049.1 at 1-2.

construction and manufacture affect how much tradeoff remains, and the results of implementing new technologies, such as silica treads, will vary between manufacturers (which ranges from manufacturers who have decades of experience with the technology to manufacturers who have none). It is hoped that increased consumer awareness may help to spur technological innovation to promote simultaneous improvements along several dimensions.

Therefore, NHTSA is concerned about the potential negative safety consequences that may occur if consumers, motivated by potential fuel savings, begin to purchase tires with better rolling resistance ratings but are unwilling to spend additional money to also maintain wet traction levels. Despite having the wet traction rating on the same sticker, some manufacturers may defer the use of the more expensive silica tread technologies and instead optimize tires to lower rolling resistance and treadwear (another important purchase motivator) at the expense of wet traction in order to gain a price advantage.

Also, as was detailed in the 2006 NAS Report, manufacturers can generate an improvement in a conventional tire tread by reducing initial tread depth.²⁰⁵ However, the committee determined that due to the economics, “reductions in tread depth and other measures to reduce rolling resistance that have significant impacts on tire wear life could be unwise and may be unacceptable.”²⁰⁶ Regarding safety implications, the committee ultimately concluded: “Discerning the safety implications of small changes in tire traction characteristics associated with tread modifications to reduce rolling resistance may not be practical or even possible. The committee could not find safety studies or vehicle crash data that provide insight into the safety impacts associated with large changes in traction capability, much less the smaller changes that

²⁰⁵ 2006 NAS Report, *supra* note 4, at 74.

²⁰⁶ *Id.* at 93.

may occur from modifying the tread to reduce rolling resistance.”²⁰⁷ “As tread depth is reduced due to tire wear, reductions in driving and braking forces occur in wet, snow and muddy conditions compared to dry road performance. The critical speed for the on-set of hydroplaning on rain covered highways is similarly lowered with increasing tire wear due to the reduced drainage capacity of the grooves, sipes (kerfs), and slots in the tread design.”²⁰⁸ Results from a 2006 survey by the RMA of more than 14,000 scrap tires showed that, excluding the first year of service, 59 percent of tires were replaced due to wear out (had tread at or below wear indicators).²⁰⁹ Therefore, the study suggests that a large percentage of consumers use tread wear indicators to signal the need for tire replacement. However, the agency is aware that some consumers may have expectations of achieving a certain number of miles or years of use for a given set of tires, and starting with less initial tread depth could result in some increase in the operation of tires at or below recommended removal depths. In those cases, consumers may fail to perceive that the reductions in the treadwear grade from reducing initial tread depth can result in less safety. Therefore, the new FMVSS No. 139 continues to require treadwear indicators to be molded into the tread of a light vehicle tire to allow a person visually inspecting the tire to determine that it has worn to 1/16” (2/32”).

A survey of the current marketplace was undertaken to estimate what information consumers currently have for choices in wet traction, price, and, where available, rolling resistance performance of tires. From the NHTSA ratings in safecar.gov and tires available at TireRack.com, approximately 20 percent of tires currently have traction ratings of AA, 70 percent have ratings of A, and 10 percent have ratings of B. There were no C-rated tires for on-

²⁰⁷ *Id.* at 3.

²⁰⁸ National Highway Traffic Safety Administration, *The Pneumatic Tire*, DOT HS 810 561, at 657 (February 2006).

²⁰⁹ See Rubber Manufacturers Association News Release, *Tire Industry Study: Chronological Age Alone Does Not Determine When Tires Are Removed From Service* (May 23, 2006), available at <http://www.betiresmart.org/newsroom/release.cfm?ID=185> (last accessed March 11, 2010).

road passenger vehicle use. From the NHTSA data and the data from the California Energy Commission and the Consumer Reports magazine, it appears that tire makers design most tires with AA wet traction rating for flag-brand and high-performance tires with correspondingly high average selling prices. Data for rolling resistance, wet traction, and list price performance indicate that tires with both A-traction rating and low rolling resistance performance are available at all list price levels.

NHTSA's recent consumer research indicates that consumers care more about the durability and safety characteristics than the fuel efficiency of a replacement tire.²¹⁰ Specifically, more than two thirds of survey respondents are willing to pay more for tires with above average performance ratings for traction (70 percent of survey respondents), treadwear (70 percent of survey respondents), and fuel efficiency (67 percent of survey respondents). When asked "when you think about tire performance, what attributes or performance measures are most important to you personally," 47 percent of survey respondents stated some form of durability (e.g., tread life, reliability) and 37 percent of survey respondents answered that traction/handling were important to them (e.g., all season usage, wet road handling). Fourteen percent of survey respondents specifically responded with the words safety or security. All other responses got much less significant results, including performance, which includes the words mileage and general performance, accounting for 17 percent of those surveyed. Additionally, when asked how important are each of the following tire performance metrics to you personally, 93 percent of respondents stated that tire traction was either extremely important or very important to them, 91 percent of respondents stated that tire treadwear was either extremely important or very

²¹⁰ NHTSA conducted additional consumer research after the notice of proposed rulemaking (NPRM) was issued to improve understanding of the typical tire purchaser and the tire purchasing process for the average consumer. *See* NHTSA Rolling Resistance Survey (Aug. 19, 2009). This and other reports relied on in the final rule will be placed into the docket.

important to them, while 80 percent of respondents stated that fuel efficiency was either extremely important or very important to them. These survey results mitigate the concerns about potential negative safety consequences resulting from consumers sacrificing traction to maximize the fuel efficiency of replacement tires.

Advocates expressed concern that due to the fact that only the most expensive tires may be able to maintain a high traction rating while improving fuel efficiency, consumers may be misled into choosing tires with good fuel efficiency and durability but poor or inadequate safety. Thus, Advocates commented that NHTSA must carefully conceive and format a tire label to ensure that it does not promote cost savings at the expense of safety.

Agency response: NHTSA agrees with Advocates on the need to not emphasize the fuel efficiency rating above the traction rating and will consider this when finalizing the consumer information and consumer education portions of the program. However, the concerns expressed by Advocates and NHTSA in the NPRM about the possibility that consumers might sacrifice safety for improved fuel efficiency are certainly mitigated by the results of recent NHTSA consumer research.

ii. Test procedure

Although rolling resistance is a standard measurement for characterizing and comparing tire energy performance, less comprehensive data exist in the public domain for accurate characterizations of tire traction. There are different methods of evaluating traction. For example, the UTQGS rating or the European wet grip rating use different test procedures that do not evaluate the same elements.

In the NPRM, NHTSA proposed to use the traction test procedure specified in the agency's UTQGS regulation to rate tires for safety,²¹¹ reasoning that this test procedure for measuring wet traction is the only metric for which consistent data are widely available for a range of tires.²¹² NHTSA explained that the wet traction test procedure measures a tire's coefficient of friction during braking. In the context of tires on a passenger vehicle, the amount of force available to the braking system to decelerate the vehicle is determined by the tire, the road surface, and the conditions of their interaction. This value is measured by the coefficient of friction, μ (mu), which is the ratio of the longitudinal force divided by the vertical load on the tire. The higher the coefficient of friction is for a given tire, the more friction available to decelerate the vehicle. The choice of tire can affect the amount of reduction in friction on wet surfaces.²¹³ Thus, different tires' measurements of the coefficients of friction during a braking test provide objective comparative information on tire's traction performance.

The UTQGS traction test procedure measures a tire's coefficient of friction when it is tested on wet asphalt and concrete surfaces. The test tire is installed on an instrumented axle of a traction trailer, which is towed by a truck at 40 miles per hour (mph) over wet asphalt and concrete surfaces. The tow truck is equipped with an on-board water supply system that sprays water in front of the test tire. The brakes, from the test tire only, are momentarily locked, and sensors on the axle measure the longitudinal and vertical forces as it slides in a straight line. The coefficient of friction for the pair, test tire and surface, is then determined as the ratio of the longitudinal and vertical forces.

²¹¹ See 49 CFR § 575.104(f).

²¹² Tire Fuel Efficiency NPRM, *supra* note 9, at 29560-29561.

²¹³ The instantaneous level of friction that can be developed by a tire-road surface pair is dependent on parameters such as the amount of lubrication (water, ice, snow, etc.) between the surfaces, speed, temperature, and many other factors. The effects of these parameters can be significant. For instance, in the case of the wet friction coefficients measured in the agency's tire traction safety rating, the water on the road surface substantially reduces the intermolecular adhesion of the tire rubber to the road surface aggregate, yielding a 20 to 30 percent reduction in available friction compared to dry conditions.

Which test procedure: Michelin suggested an alternate test method for measuring traction because it stated the measurement of a tire's wet traction capability with a traction trailer is an attempt to quantify the tire's role in the vehicle stopping distance, which is the actual tire performance experienced by the consumer.²¹⁴ Michelin commented that the poor reproducibility of the UTQGS traction test can result in misrepresentation of tire traction. Michelin stated that this poor repeatability has a lot to do with the fact that the ASTM E 501 ribbed bias ply tire is used as a reference to ensure that the grip of the test lane is within tolerance and to correct test data for evolution of test conditions. Michelin commented that because the evolution of the E 501 tire between two test days is significantly different than the change in test tire performance, this causes poor repeatability.

Accordingly, Michelin suggested an ISO test method that it argued better measures the tire's role in vehicle stopping distance: ISO 23671, Passenger car tyres – Method for measuring relative wet grip performance – Loaded new tyres. Michelin argued that this ISO 23671 test method is better than the UTQGS test method for several reasons including: (1) the standard provides for flexibility of test location (allowing manufacturers the possibility of self-certification); (2) either traction trailer or on-vehicle braking can be used for measurement, allowing for greater flexibility; and (3) the design and materials of the control tire (14-inch Standard Reference Test Tire (SRTT), ASTM E 1136) more closely resemble modern passenger car tires (than the tire used in the UTQGS test method). Michelin urges NHTSA to consider a vehicle braking method for measuring traction based on its greater imitation of in-service conditions and on its superior repeatability and reproducibility.

Agency response: NHTSA declines to use a test procedure other than a modified version of what is already specified for UTQGS. Based on the tight statutory deadline for this

²¹⁴ Michelin Comments, Docket No. NHTSA-2008-0121-0048.1 at 7-8.

program, NHTSA cannot perform the research necessary to validate and establish a test procedure other than the wet traction trailer test that is already specified in another NHTSA regulation. Since our equipment and procedure is well known throughout the tire industry, we propose using the existing procedure, as the primary traction method, but modifying current equipment to collect peak coefficient of friction data to rate tires for this program, as discussed immediately below.

The agency did not adopt Michelin's recommendation to use the 14-inch SRTT (ASTM E 1136) or 16-inch SRTT (ASTM F 2493) as the traction test control tire instead of the current ASTM E 501 Standard Rib tire. This decision was based on a number of factors. First, Michelin provided no data demonstrating that the test results would be more accurate or less variable when using a SRTT as the traction control tire instead of the E 501 Standard Rib tire. The agency understands that the RMA traction data provided in comments was also collected using the E 501 tire as the control tire. Therefore, no additional data was available for the agency for evaluation. Due to the tight statutory deadline for this program, NHTSA does not have the time necessary to conduct its own test program to evaluate the performance of either of the SRTT tires against the current E 501 tire. Second, the agency has not evaluated the durability of the all-season tread pattern of the 14- or 16-inch SRTT radial tires as compared to the smooth-ribbed tread design of the E 501 tire during prolonged locked-slide traction testing. Less durable tires could increase the annual costs of testing. Third, the UTQGS traction test includes by reference test procedures and apparatus from ASTM E 274-79, "Standard Method for Skid Resistance of Paved Surfaces Using a Full-Scale Tire," which itself references the E 501 tire as a standard tire (but not E 1136 or F 2493). Therefore, the agency recommends that Michelin initially work with ASTM to

evaluate the suitability of upgrading the E 274 test procedure to reference the ASTM E 1136 or F 2493 tires as control tires.

Regarding the ISO 23671 test procedure recommended by Michelin, this ISO procedure offers the option of using a trailer or vehicle as the test equipment for means of collecting data to measure peak traction. This approach may be practiced elsewhere, but we do not have data to base a wet traction rating using this method. Further, this ISO test method specifies a high coefficient of friction surface, which is currently unavailable for use by the agency. Currently, NHTSA only has data for concrete and asphalt surfaces used in the UTQGS testing method, which uses a traction trailer.

Traction testing is preferred over vehicle testing (stopping distance) because one traction trailer may be used for various tire sizes. Depending on the vertical load applied on the test tire, the brake rate application may vary from tire to tire, but it may be adjusted when using a traction trailer. Thus, one traction trailer may be used to evaluate various tire sizes, while test conditions for various tire sizes may be maintained during testing using a trailer. Using a vehicle for testing would better imitate real world conditions, but would introduce vehicle dependent effects (due to the design of the vehicle's brakes and suspensions). Also, several vehicles would be needed to evaluate different size tires, which may be cost prohibitive.

Measurements taken: The UTQGS traction rating procedure specifies that the traction coefficients for asphalt and for concrete are to be calculated using the locked-wheel traction coefficient on the tire, or sliding coefficient of friction. More specifically, upon application of the brakes, the tire is subjected to shear between the wheel and the road surface, and deforms towards the rear of the vehicle. This generates a traction force to oppose the motion of the vehicle. As braking torque increases, the tire deforms more and tread elements near the rear of

the contact patch with the road begin to slip rather than grip. The coefficient of friction rapidly reaches a maximum value at about 10-20 percent slip, and then declines as the longitudinal slip values increase to 100 percent, which represents a fully-locked tire. The maximum coefficient of friction in the 0-100 percent slip range is termed “peak” coefficient of friction, and the lower coefficient value for the fully-locked tire is termed “slide” coefficient of friction.

When UTQGS was designed in the 1960s, the fully-locked slide coefficient of friction represented the tire-road friction available to conventional braking systems that frequently locked their tires during hard braking. However, modern anti-lock braking and stability control systems use wheel speed sensors and complex computer algorithms to modulate the brake pressure in order to operate near the peak coefficient of friction instead of locking the tire (slide), thus utilizing more available friction from the tire-road surface pair.

Because it uses the sliding coefficient of friction, the UTQGS traction test procedure indicates the traction or wet pavement behavior for a vehicle that is not equipped with anti-lock brakes (ABS) or electronic stability control (ESC). A vehicle equipped with ABS or ESC reacts to braking and sliding in a more sophisticated way. ABS prevents wheel lock-up by pumping the vehicle’s brakes repeatedly during braking events. ESC may automatically perform activation of the brakes on individual wheels in an attempt to slow down a vehicle and point it in a different direction if the system senses a directional loss of control. NHTSA’s tire testing research showed that vehicles equipped with ABS or ESC will exhibit safer behavior on wet pavement (i.e., better traction) than the sliding coefficient of friction traction measurement would indicate in the UTQGS traction test procedure.

The peak coefficient of friction is a metric that would better indicate traction performance for vehicles equipped with these advanced braking and handling systems. This is because as

soon as ABS causes the vehicle to reapply the brakes (and also during many ESC system activations), the tires are constantly operating at or near peak coefficient of friction. Thus, since most new cars offer ABS as either standard or optional equipment, and ESC is being mandated on new light vehicles via a phase-in, NHTSA proposed to base the traction rating for purposes of the tire fuel efficiency consumer information program on the peak coefficients of friction as measured on the asphalt and concrete surfaces specified in the UTQGS traction test procedure.²¹⁵ The machinery that conducts this test already measures peak coefficient of friction, so the NPRM proposed specification of the UTQGS traction test method, but using the peak coefficients of friction measured, rather than the slide.

However, recognizing that the median age for the U.S. passenger car fleet is 9.4 years,²¹⁶ NHTSA requested comments on whether it was premature to suggest moving to an ABS-ESC focused rating based on new vehicles. The NPRM explained that the agency was considering a safety rating taken from the average of the four friction numbers (peak & slide on asphalt & concrete), all of which can be collected during the same test. The NPRM requested comments on whether it should instead consider a composite test, and if the four friction numbers should be weighted equally or differently.

NHTSA sought comment on an empirically developed traction rating formula that included both peak and slide coefficients of friction as an example of how the agency might do this.²¹⁷ RMA commented that the agency's proposal for an alternate traction rating formula is ad-hoc and not science based.²¹⁸ RMA commented that it is no doubt possible to devise any

²¹⁵ The phase-in electronic stability control (ESC) requires 100 percent of the fleet to be equipped with ESC by model year 2011, i.e., by September 2010. 72 FR 17236, 17291. Since an anti-lock braking system (ABS) provides many of the components necessary for ESC, NHTSA believes that most manufacturers will likely equip vehicles with ABS as they equip them with ESC. *See id.* at 17256, n. 49.

²¹⁶ *See* http://usa.polk.com/News/LatestNews/News_20080215_scrappage.htm (last accessed Sept. 27, 2009).

²¹⁷ Tire Fuel Efficiency NPRM, *supra* note 9, at 29580.

²¹⁸ RMA Comments Appendix 7, Docket No. NHTSA-2008-0121-0036.8 at 8.

number of formulas to provide a 0 to 100 rating for wet traction, but in RMA's opinion, unless there is some underlying scientific principle to support them, it is not a productive exercise. Michelin, in contrast, commented that the alternate traction formula more closely follows accepted industry practices for quantifying tire performance.²¹⁹ Michelin agreed with the NPRM that peak traction values correspond more directly to advanced braking system performance and expressed support for this move toward a characterization more in line with consumer's needs. JATMA supported adopting the current UTQGS traction grading test method, and not using peak coefficient of friction.²²⁰ Tire Rack supported basing the traction rating on a combination of peak and slide coefficients of friction.²²¹ Tire Rack stated that adding the coefficients of friction measured on wet asphalt and concrete surfaces better reflects the tire performance available through advanced braking technologies.

Agency response: Based on the fact that vehicles not equipped with advanced braking technologies will be on the road for many years, NHTSA has determined that the safety rating should be based on a combination of slide and peak coefficients of friction on asphalt and concrete. However, since the agency will be finalizing the form of the ratings and the consumer information requirements in a future rulemaking, we will not discuss the comments on the proposed formula for a safety rating in this final rule.

Basing a safety rating on a composite index using both peak and slide coefficients of friction measurements creates a safety rating that considers the safety performance for both old vehicles without advanced braking technologies (wet traction performance correlates to slide), and new vehicle types with advanced braking technologies (wet traction performance correlates to peak). A safety rating based only on slide or only on peak coefficient of friction would be

²¹⁹ Michelin Comments, Docket No. NHTSA-2008-0121-0048.1 at 7-8.

²²⁰ JATMA Comments, Docket No. NHTSA-2008-0121-0031.1 at 1.

²²¹ Tire Rack Comments, Docket No. NHTSA-2008-0121-0026.1 at 3.

essentially meaningless to either vehicles with advanced braking technologies or to vehicles with conventional brake technology, respectively. NHTSA considered weighing the slide and peak coefficients of friction in the rating formula to create an index that reflected the percentage of the types of vehicles on the road. The agency realizes that the ratio of new braking technology vehicles on the road to conventional braking vehicles on the road will persistently increase for decades until all conventional brake technology vehicles are essentially phased out, at which point peak coefficient of friction will be the only measure of traction that is relevant to the way that all vehicles brake. NHTSA will continuously monitor the fleet turnover, and will likely transfer the safety rating to an index based mostly on peak. Until that point, the agency believes it is best to have a rating based on a combination of indices that indicate something useful and comparative to everyone, as opposed to a rating based only on peak or slide, which would mean nothing to some. Continuously changing the formula to reflect these shifting percentages would likely cause some changes in ratings of existing tires, and NHTSA believes there is a benefit to keeping the ratings stable for a period of time, both in terms of reducing costs to NHTSA and manufacturers, and reducing potential confusion for consumers.

Additionally, and as will be discussed in the forthcoming supplemental NPRM on the consumer information and consumer education portions of this program, a combination of peak and slide coefficients of friction also reduces the variability of the ratings. A safety rating based only on peak coefficient of friction results in ratings with high variability.

RMA suggested that wet traction be weighted for the percentage of asphalt and concrete road surfaces in the U.S., since concrete now accounts for less than 4 percent of roads. The agency analyzed the number of fatal crashes in the Fatality Analysis Reporting System (FARS). For the years 2002 to 2008, approximately 8.2 percent of fatal crashes occurred on wet concrete

road surfaces.²²² After consideration of comments, NHTSA has determined that a safety rating should be based on both wet concrete and asphalt road surfaces. While wet concrete is likely not a condition that occurs often for any particular motorist, it potentially is the most dangerous because coefficients of friction can be lower/worse on concrete than on asphalt. Thus, wet concrete represents the “worse case scenario” in terms of the type of roadways on which a motorist might find him/herself driving. Arguably, if manufacturers will design tires with the goal of achieving a higher safety (wet traction) rating, NHTSA should include concrete coefficients of friction in the rating index so that manufacturers take all likely driving wet surfaces into account when designing tires. NHTSA, therefore, believes that concrete coefficients of friction should be included in the safety rating as they likely represent a “worse case scenario.”

In response to the comments on the alternate traction formula NHTSA sought comment on in the NPRM,²²³ since publication of the NPRM the agency has realized that the formula it sought comment on is weighted by taking the test tire’s friction coefficient and divided by a weighted sequence of two control tires. Mathematically, it is still a fraction number, which is typical for a friction coefficient, but unfortunately it no longer means it still represents a “friction.” Physically, it would just be a ratio or factor. Therefore, the agency does not think this is a correct approach. NHTSA believes that an empirically developed wet traction index is an appropriate metric for a wet traction rating, as NHTSA will discuss in the forthcoming supplemental NPRM on the content of the consumer information and consumer education portions of the tire fuel efficiency consumer information program.

²²² This analysis excluded the “Water (standing or moving)” roadway surface condition category, which was added in 2007 and not indicative of the water depths used in UTQGS wet traction testing. This analysis also excluded blank, other or unknown roadway surface conditions and roadway surface types.

²²³ Tire Fuel Efficiency NPRM, *supra* note 9, at 29580.

Authority to establish safety and durability ratings: NHTSA’s proposal provided that alongside a fuel efficiency rating, tire manufacturers would provide safety and durability ratings. RMA and Ford argued that EISA does not give NHTSA authority to establish a new rating system for consumer information on safety or durability. According to RMA and Ford, because EISA only directs NHTSA to establish a national tire fuel efficiency rating system, NHTSA is not authorized by EISA to create new ratings or consumer information requirements for the safety and durability of replacement tires.²²⁴

Agency response: Section 111 of EISA directs NHTSA to promulgate rules establishing a “national tire fuel efficiency consumer information program for motor vehicle replacement tires ... to educate consumers about the effect of tires on automobile fuel efficiency, safety and durability.”²²⁵ RMA recognizes that NHTSA has the authority under EISA to require replacement tire fuel efficiency rating information. And RMA concedes that EISA gives NHTSA the authority to include traction and treadwear ratings in the label.²²⁶ But RMA states that because EISA directs NHTSA to promulgate regulations that include “a national tire fuel efficiency rating system,” EISA provides limited authority regarding new “safety” and “durability” ratings. More particularly, RMA contends that EISA does not give NHTSA authority to create new “safety” or “durability” consumer rating systems or mandate new consumer information on these attributes at the point of sale. RMA instead suggests that as to these concerns, NHTSA is limited to the UTQGS ratings: “[t]he fact that the UTQGS system

²²⁴ RMA Comments, Appendix 3, Docket No. NHTSA-2008-0121-0036.4 at 2-3; Ford Comments, Docket No. NHTSA-2008-0121-0038.1 at 2-3.

²²⁵ 49 U.S.C. § 32304A(a)(1).

²²⁶ RMA Comments, Appendix 3, Docket No. NHTSA-2008-0121-0036.4 at 3.

already exists enables NHTSA to use the existing wet traction and treadwear to satisfy the requirements.”²²⁷

NHTSA interprets EISA to provide NHTSA authority to establish new “safety” and “durability” rating systems and to require consumer information on these attributes of tires. The Congress spoke clearly. NHTSA is required to establish a national tire fuel efficiency consumer information program for replacement tires. Congress specified that this program is to educate consumers about the effect of tires on automobile fuel efficiency, safety and durability.²²⁸ Congress further stated what the consumer information program is to include. Among others, it is to include a national tire fuel efficiency rating system to assist consumers in making more educated tire purchasing decisions.²²⁹ It also is to include requirements for providing information at the point of sale.²³⁰ Thus, the scope of the national tire fuel efficiency consumer information program is set forth in subsection (a)(1). It covers consumer information on automobile fuel efficiency, safety, and durability for replacement tires. For each of these attributes, under subsection (a)(2), the national tire fuel efficiency consumer information program is to include, among others, a national tire fuel efficiency rating system and consumer information. This is a new program, because the rule was to “establish” a program.²³¹ EISA does not use the terms modify or amend with reference to an existing program. For this new program, the rating system under subsection (a)(2) of Section 32304A is not limited to “automobile fuel efficiency” of tires because both subsection (a)(1) and subsection (a)(2)(A) refer to the rule establishing a “national tire fuel efficiency” consumer information program, and automobile fuel efficiency is only one attribute of the information program. The others are

²²⁷ *Id.* at 3.

²²⁸ 49 U.S.C. § 32304A(a)(1).

²²⁹ 49 U.S.C. § 32304A(a)(2)(A).

²³⁰ 49 U.S.C. § 32304A(a)(2)(B).

²³¹ 49 U.S.C. § 32304A(a)(1).

safety and durability.²³² Moreover, subsection (a)(2)(A) does not differentiate the agency’s authority on that aspect of the consumer information program providing a rating on “automobile fuel efficiency” and those aspects of the program providing ratings on “safety” and “durability.”²³³ Accordingly, EISA requires NHTSA to establish a new program with ratings on safety and durability.

To the extent that the Congress did not speak directly to the question whether it intended that NHTSA promulgate rules creating new “safety” or “durability” consumer rating systems or mandate new consumer information on these attributes at the point of sale, NHTSA interprets EISA to provide that authority. As noted above, Section 111 of EISA requires NHTSA to establish a “national tire fuel efficiency consumer information program for motor vehicle replacement tires ... to educate consumers about the effect of tires on automobile fuel efficiency, safety and durability.”²³⁴ The statute provides broad authority for a consumer information program rule to cover automobile fuel efficiency, safety and durability. It does not prescribe the contours of the rule covering automobile fuel efficiency, safety and durability consumer information. It sets only minimum requirements on what the rulemaking shall “include.”²³⁵ Nothing in EISA limits NHTSA, in promulgating the national tire fuel efficiency consumer information program, to adopting existing ratings from the UTQGS program. In fact, the UTQGS ratings are not mentioned in 49 U.S.C. § 32304A. Moreover, as reflected in EISA, tires have a number of attributes in which consumers would be interested. In addition to fuel economy, these include safety and durability. Congress left it to NHTSA how to rate safety and durability. The effectiveness of the consumer education program depends in part on having

²³² See 49 U.S.C. § 32304A(a)(1).

²³³ See *id.*

²³⁴ *Id.*

²³⁵ 49 U.S.C. § 32304A(a)(2).

effective and consistent methods of rating fuel efficiency, safety, and durability, and by including all ratings at the point of sale. In view of the Congressional direction that NHTSA establish “a national tire fuel efficiency consumer information program” that includes a “rating system . . . to assist consumers in making more educated tire purchasing decisions,” NHTSA interprets EISA to give the agency authority to establish a rating system that would educate consumers on tire characteristics that may offer tradeoffs among the important tire characteristics of fuel efficiency, safety, and durability. Under the statute, this may or may not be based upon measurements from established UTQGS test procedures.

3. Durability

The rolling resistance, traction, and wear characteristics of tires are not independent of one another. The tread has a major influence on rolling resistance because it contains much of the rubber in the tire that causes energy loss. The same tread deformation contributes to the tire’s traction capabilities. A loss in wet traction capability because of treadwear is the main reason for tire replacement.²³⁶

For purposes of this program, NHTSA believes that the durability of a tire refers to how long a tire is going to last. That is, how long it is going to maintain sufficient tread depth for the safe operation and to maintain the strength the tire had when it was initially purchased. A treadwear rating measures a tire’s wear rate compared with that of control tires. Treadwear life, therefore, corresponds to treadwear durability of a tire. In the NPRM, NHTSA sought comments on other potential ways to communicate durability, but no commenter suggested anything other than tread life as a measure for durability. Tire Rack commented that it believed that treadwear

²³⁶ 2006 NAS Report, *supra* note 4, at 58.

life has been the most important rating to consumers under the UTQGS program and is the most frequently researched tire rating.²³⁷

NHTSA stated in the NPRM that the UTQGS rating system for treadwear is the only metric for which consistent data are widely available for a range of passenger car tires.

Accordingly, NHTSA proposed to specify the UTQGS treadwear procedure to rate tires for durability on the same scale and label as fuel efficiency via rolling resistance rating.²³⁸

Consumers Union commented that it disagreed with incorporating the UTQGS treadwear rating system into another rating system because in its experience, consumers do not understand the current UTQGS treadwear rating.²³⁹ Consumers Union stated that because ratings are assigned

by the tire manufacturers, tire manufacturers do not always disclose the full potential of a tire's treadwear performance. Michelin commented that to have the current UTQGS treadwear test method yield truly representative wear results, changes to the test procedure are necessary.²⁴⁰

Michelin conceded that changes of this nature are likely beyond the scope of this rulemaking.

Agency response: As noted in Michelin's comments, the NPRM acknowledged the limits of the existing UTQGS system.²⁴¹ However, given the statutory deadline for NHTSA to establish this program, NHTSA believes that using already established test procedures specified in the UTQGS regulations is the only viable option at this time to fulfill the statutory requirement that this consumer information program educate consumers about tires' relationships to fuel efficiency, safety, and durability. The UTQGS test method for measuring tread life is the only metric for which consistent data are widely available for a range of passenger car tires. NHTSA

²³⁷ Tire Rack Comments, Docket No. NHTSA-2008-0121-0026.1 at 3.

²³⁸ See 49 CFR § 575.104(e).

²³⁹ Consumers Union Comments, Docket No. NHTSA-2008-0121-0034 at 5.

²⁴⁰ Michelin Comments, Docket No. NHTSA-2008-0121-0048.1 at 9.

²⁴¹ Tire Fuel Efficiency NPRM, *supra* note 9, at 29561, 29573-29575. The UTQGS is discussed in more detail later in this notice.

will continue, however, to explore other test methods that could be used to establish a metric for a durability rating. NHTSA will consider future revisions of the treadwear test procedure if information suggests those revisions would enhance the program.

B. How will the rating system information be conveyed to consumers?

As noted above, NHTSA is not specifying the content or requirements of the consumer information and education portions of the program. In light of the important objectives of this rulemaking, we are continuing to work to improve the content and format of the consumer information so that consumers will, in fact, be adequately informed. Specifically, NHTSA will be conducting additional consumer testing to explore how consumers will best comprehend information in each of the three categories discussed above. After additional consumer testing, NHTSA will publish a new proposal for the consumer information and education portion of this new program.

NHTSA will be conducting additional consumer research to identify candidate label designs (and variations), examine consumer comprehension of such concepts, and examine consumer preferences for information transmission formats. NHTSA has been reviewing recommendations on regulatory reform in a recent White House report to Congress and is taking those ideas into consideration in developing the new research plan.²⁴² NHTSA has also been consulting with other government agencies, including EPA, DOE, the Food and Drug Administration, and the Federal Trade Commission, to help identify best practices for research for consumer education programs. NHTSA is also taking into consideration its own previous research before and after the NPRM was published.

²⁴² Office of Management and Budget, 2009 Report to Congress on the Benefits and Costs of Federal Regulations and Unfunded Mandates on State, Local, and Tribal Entities (Jan. 27, 2010), *available at* http://www.whitehouse.gov/omb/assets/legislative_reports/2009_final_BC_Report_01272010.pdf (last accessed March 10, 2010).

NHTSA received numerous comments in response to the consumer information proposals in the NPRM. These included comments for and against a combined or overall rating, comments on NHTSA's proposed 0-100 rating scale, suggestions for alternatives to this scale, and comments on providing additional context for the ratings. However, in most instances, these comments reflected little other than the commenter's opinion on what would constitute an effective consumer information program. NHTSA wishes to gather more concrete information to guide its decision-making process on these requirements. However, NHTSA will take these comments into consideration when developing the research plan and also in the future proposal for these requirements.

To further the development of the consumer information and consumer education portions of the tire fuel efficiency consumer information program, NHTSA recently announced that it will hold a public meeting on a new draft consumer research plan on Friday March 26, 2010 at the U.S. Department of Transportation Headquarters building.²⁴³ The agency has opened a new docket for the public meeting, Docket No. NHTSA-2008-0018, and on that docket interested members of the public can access the draft research plan, early agency consumer research, and any written comments submitted at the meeting or in response to the meeting notice. NHTSA will consider the public comments received in developing a research plan to aid in the development of consumer information requirements and NHTSA's consumer education plan regarding tire fuel efficiency. Depending on the results of that meeting, NHTSA may conduct some focus groups to help it refine the concepts that will be tested.

The primary focus of the research will be a comprehension survey, the final design of which will depend on the final number of concepts and variations identified in the public

²⁴³ Notice of Public Meeting; Tire Fuel Efficiency, 75 FR 11806 (March 12, 2010), Docket No. NHTSA-2010-0018-0001.

meeting and focus groups (if conducted). The research design may include both within and between-subjects factors. In particular, the draft research plans specifies that subjects will be randomly assigned to a given label, however, variations of the same label may be presented within subjects. The main factors will be counterbalanced and the presentation order randomized as needed to provide internal validity. Performance measures will include percent of correct response (response rate) and purchase intention. The survey and experimental designs will also consider the potential for subject fatigue by keeping the number of questions and survey duration as short as possible.

There is a need to collect quantitative information about consumer comprehension of label concepts describing tire attributes, given the availability of new information about tires' fuel efficiency. The information on consumer comprehension will ensure that the selected label will provide accurate, consistent and valuable information to consumers purchasing replacement tires. Some of the key questions include:

- What information would be provided to consumers of replacement tires?
- What is the best format (metric(s), format(s)) to provide the information?
- How does the difference in the scale/rating system affect consumer comprehension of the information provided?
- Do consumers understand the information provided when generalized statements (i.e., caveats) are provided?

The draft consumer research plan identifies three objectives for new consumer research:

- Develop label concepts displaying information on tire fuel efficiency, safety, and durability.

- Collect data on consumer comprehension of the information provided by various label concepts and data on purchase intention.
- Rank order concept labels based on quantitative data on consumer comprehension.

As discussed above, after additional consumer testing, NHTSA will re-propose the consumer information component of this new program. These requirements may include labels and retailer requirements such as originally proposed, or alternative and/or additional requirements based upon the results of the research.

VII. Information dissemination and reporting requirements for tire manufacturers and tire retailers

A. Requirements for tire retailers

1. NHTSA will re-propose information dissemination requirements for tire retailers

Based on NHTSA's pre-NPRM understanding of the average tire purchaser and on the tire purchasing process generally, NHTSA proposed to require that tire retailers who have a display room, i.e., those that present sample tires offered for sale to consumers, display a tire fuel efficiency consumer information program poster that NHTSA would print and provide to retailers. The NPRM explained that the agency believed that this requirement would be the most successful method of encouraging consumers to consider the new ratings at the point of sale. As for poster content, the NPRM stated that this poster would make consumers aware that there are comparative government tire ratings available, and would communicate the importance of comparing replacement tire ratings as well as the importance of proper tire maintenance.

NHTSA sought comment on the following principles it proposed be conveyed in the poster:

- Your choice of tires you buy to put on your vehicles affects:
 - The gas mileage your vehicle will get,
 - The traction and other safety characteristics your vehicle can achieve, and
 - How long you can reasonably expect it will be before you'll need to buy another new set of tires.
- There is a new government program that requires new tires for cars, vans, and SUVs to have a paper label on the tire tread to show you the tire's rating for fuel efficiency, safety, and durability.
- Ask your dealer for the ratings for the tires you are considering for your vehicle.
- More information about this ratings program and a complete listing of the ratings for all these tires is available at www.nhtsa.gov.
- Whatever tire you choose, you need to keep it properly inflated to get the best fuel efficiency, safety, and tire life that the tire can deliver.

RMA commented that NHTSA should require tire retailers to display the proposed poster and make the rating information available to consumers in the tire retailer showrooms or waiting areas. RMA recommended that NHTSA give tire retailers options for making this information available and require that each retailer choose one or more options that suits their business model and needs.²⁴⁴ RMA suggested these retailer requirements should be in lieu of requiring the ratings on a tire label, for reasons discussed below in section VII.B.1. RMA and Consumers Union both suggested that NHTSA produce and distribute to tire retailers nationwide a tire fuel efficiency program booklet, as NHTSA produces for the UTQGS program.²⁴⁵

²⁴⁴ RMA Comments, Docket No. NHTSA-2008-0121-0036.1 at 7.

²⁴⁵ Consumers Union Comments, Docket No. NHTSA-2008-0121-0034 at 3; RMA Comments, Docket No. NHTSA-2008-0121-0036.1 at 7.

TIA stated that the proposed tire label and poster requirement are passive communication tools and only a starting point for consumer education.²⁴⁶ TIA commented that it believes NHTSA is underestimating the importance of the dialog between the sales associate and the consumer at the point of sale. TIA stated that results from NHTSA's focus group research and the UC Davis Workshop point out the importance of the seller in the process of educating the consumer. Accordingly, TIA recommended a training program for tire retailer sales associates, which TIA would run "with proper funding." TIA stated that it is in the best position to run an education and incentive program for tire retailer sales associates.

Consumers Union commented that NHTSA should provide better guidance on how to best ensure that consumers can see the proposed educational poster at the point of sale.²⁴⁷ Regarding the content of the proposed informational poster, Consumers Union recommended that point of sale information and posters emphasize the benefits of proper car and tire care, including maintaining proper tire inflation pressure, checking wheel alignment, and rotating tires to optimize tire fuel efficiency, traction, and tread wear.²⁴⁸ Public Citizen et al. supported NHTSA's proposed "principles" as laid out above of what information should be included on the poster.²⁴⁹ Additionally, Public Citizen et al. commented that the proposed informational poster should include at a minimum explanations of what each of the ratings categories means, as well as direction to NHTSA's website and a statement about the importance of proper tire inflation.

Agency response: In order to have the full benefit of any new understanding of how consumers best comprehend information gained from the agency's new consumer research, NHTSA will re-propose requirements for tire retailers in the supplemental NPRM on the

²⁴⁶ TIA Comments, Docket No. NHTSA-2008-0121-0039.1 at 1-10.

²⁴⁷ Consumers Union Comments, Docket No. NHTSA-2008-0121-0034 at 6.

²⁴⁸ Consumers Union recommended this language instead of the proposed poster language that emphasized tire inflation "to get the best fuel efficiency, safety, and tire life."

²⁴⁹ Public Citizen et al. Comments, Docket No. NHTSA-2008-0121-0043.1 at 6.

consumer information and education portion of the tire fuel efficiency consumer information program.

2. NHTSA will re-propose requirements regarding the label

The NPRM proposed to require that tire retailers leave the paper label which displays the tire fuel efficiency rating graphic on the tire until the tire is sold.²⁵⁰

Ford recommended that NHTSA add a requirement to the proposed regulation that explicitly states that tire retailers are required to maintain labels on tires through the point of sale similar to prohibitions from removing Monroney window labels on vehicles.²⁵¹ Ford suggested that an exception to such requirement be made where the tires have been installed onto a customer's vehicle, but that NHTSA should still require that the tire retailer convey the information on the label to the consumer. Ford reasoned that if the regulations do not require that the information be explained or even received by the consumer the potential benefits of the program will be substantially reduced.

Similarly, ICCT suggested that NHTSA require tire retailers who mount tires provide tire efficiency information to consumers before the tire is purchased and mounted.²⁵² ICCT stated that providing this information at the point of purchase through a label that is in many cases visible to the consumer only after installation would undermine the effectiveness of the program.

Agency response: As noted above, in order to have the full benefit of any new understanding of how consumers best comprehend information gained from the agency's new consumer research, NHTSA will re-propose requirements for tire retailers in the supplemental

²⁵⁰ Note that NHTSA uses the term "paper label" in the colloquial sense; many labels on tires are actually made of plastic.

²⁵¹ Ford Comments, Docket No. NHTSA-2008-0121-0038.1 at 3. A Monroney label is the price sticker label required on new automobiles that contains the safety rating information developed by NHTSA in its New Car Assessment Program (NCAP). See 49 CFR 575.301.

²⁵² ICCT Comments, Docket No. NHTSA-2008-0121-0042.1 at 1-2.

NPRM on the consumer information and education portion of the tire fuel efficiency consumer information program.

B. Requirements for tire manufacturers

1. NHTSA will re-propose requirements regarding communication of ratings

In the NPRM, NHTSA proposed two alternatives for tire manufacturers to present the required rating information on a paper label affixed to each subject replacement tire. A tire manufacturer could fulfill the requirement by placing the required rating graphic somewhere on the paper labels already required to be affixed to each individual tire by UTQGS requirements.²⁵³ Alternatively, a tire manufacture could fulfill the tire fuel efficiency labeling requirements by affixing a separate paper label with just the tire fuel efficiency label graphic on it.

RMA opposed the requirement of a tire label as a means of providing point of sale information to consumers.²⁵⁴ RMA commented that the proposed label would be extremely costly to produce, especially in color, and would lead to little, if any, benefit, since consumers would be unlikely to see the label.²⁵⁵ RMA suggested that instead of requiring tire manufacturers to put ratings on a tire label, NHTSA should require tire retailers to make the ratings information available to consumers.

Consumers Union also expressed concerns that a consumer might not see a label on the tire they purchase if the tire retailer is installing the tires. Consumers Union commented that a

²⁵³ See 49 CFR § 575.104(d)(i)(B).

²⁵⁴ RMA Comments, Docket No. NHTSA-2008-0121-0036.1 at 7.

²⁵⁵ For a full discussion of RMA's comments on NHTSA's cost estimates of the label, see section IX below and the Final Regulatory Impact Analysis, which will be placed in this docket and will be available on NHTSA's website, www.nhtsa.gov.

paper label affixed to a tire may be insufficient because if the tire is purchased online, consumers may not have the ability to comparatively view the label and compare to labels on other tires.²⁵⁶

TIA similarly commented that a requirement to place rating information on the paper tire label would not help consumers make a tire choice for their vehicle.²⁵⁷ NADA commented that rather than requiring the ratings on the tire label, consumers would be better served by the comparative tire rating information website that could be referenced by point of sale posters.²⁵⁸

Many commenters expressed support for NHTSA's proposed paper label requirement. Public Citizen et al. supported ratings appearing on individual tires, and stated a preference for requiring molding the information on tire sidewalls.²⁵⁹ Tire Rack commented that tire labels will positively confirm the rating of specific tires.²⁶⁰ AAA commented that the tire labeling will provide enhanced benefits for consumers, but also requires considerable consumer education to achieve the full potential of the proposed labeling recommendations.²⁶¹ ICCT commented that physically attaching a paper label to each tire is an important step forward.²⁶² Ford supported the label requirement by stating that in addition NHTSA should add the requirement that explicitly states that tire retailers must maintain labels on tires through the point of sale.²⁶³ NRDC stated in several places that rating and labeling was an important first step towards a comprehensive program.²⁶⁴

Several commenters also implicitly supported requiring tire manufacturers to print the ratings information on the tire label by calling the ratings "the label" and by commenting on

²⁵⁶ Consumers Union Comments, Docket No. NHTSA-2008-0121-0034 at 3.

²⁵⁷ TIA Comments, Docket No. NHTSA-2008-0121-0039.1 at 1.

²⁵⁸ NADA Comments, Docket No. NHTSA-2008-0121-0041.1 at 1.

²⁵⁹ Public Citizen et al. Comments, Docket No. NHTSA-2008-0121-0043.1 at 3.

²⁶⁰ Tire Rack Comments, Docket No. NHTSA-2008-0121-0026.1 at 1.

²⁶¹ AAA Comments, Docket No. NHTSA-2008-0121-0047.1 at 2.

²⁶² ICCT Comments, Docket No. NHTSA-2008-0121-0042.1 at 1.

²⁶³ Ford Comments, Docket No. NHTSA-2008-0121-0038.1 at 3.

²⁶⁴ NRDC Comments, Docket No. NHTSA-2008-0121-0040.1.

various proposed requirements associated with the content of the label. For instance, the European Commission did not oppose the label requirement and commented that tires that are already stamped with the week of production should not need to print that information on the label. Ford, GM, Advocates, and NRDC called the ratings graphic “the label” on multiple occasions.

Agency response: As noted above, NHTSA is not specifying the content or requirements of the consumer information program at this time. In light of the important objectives of this rulemaking, we are continuing to work to improve the content and format of the label so that consumers will, in fact, be adequately informed. After additional consumer testing, NHTSA will publish a new proposal for the consumer information portion of this new program.

In the NPRM, we proposed to specify a minimum size for the tire fuel efficiency rating system graphic (4.5 inches high and 5.5 inches wide). The minimum size specification was proposed to ensure that the rating graphic will be legible on the label. Tire Rack commented that even if the label was oriented differently, the proposed 4.5 inch requirement would be too wide for many tire sizes.²⁶⁵ NHTSA agrees with Tire Rack that the proposed size requirement may pose a problem for some tires and will explore alternative options in the forthcoming supplemental NPRM to re-propose the required label.

2. Data reporting

The NPRM proposed to require tire manufacturers to report to NHTSA for each tire SKU that is individually rated under this tire fuel efficiency consumer information program the following data:

²⁶⁵ Tire Rack Comments, Docket No. NHTSA-2008-0121-0026.1 at 6.

- Rolling resistance force (RRF), as computed from the ISO 28580 test (in Newtons) and followed in parenthesis by the equivalent pounds-force, e.g., 5 Newtons (1.12 lbf).
- Test load, as specified in the ISO 28580 test procedure (in Newtons) and followed in parenthesis by the equivalent pounds-force, e.g., 5 Newtons (1.12 lbf).
- Rolling resistance rating.
- Wet traction rating.
- Average peak coefficient of friction for asphalt, as measured during the UTQGS traction test procedure (49 CFR § 575.104(f)).
- Average peak coefficient of friction for concrete, as measured during the UTQGS traction test procedure (49 CFR § 575.104(f)).
- Adjusted peak coefficient of friction for asphalt (μ_{APA}).
- Adjusted peak coefficient of friction for concrete (μ_{APC}).
- Treadwear rating.
- Wear rate of tested tire, as measured during the UTQGS treadwear procedure (49 CFR § 575.104(e)).

NHTSA gave several reasons for proposing that the tire manufacturer submit these various measurements to the agency, which included (1) it would help with enforcement of the ratings; and (2) it would contribute to NHTSA's online tires database.

Submission of test values: RMA opposed the requirement of reporting any measured or calculated test values because they state that submission of data are not necessary for either enforcement of a self-certified rating system or as a method of estimating potential fuel

savings.²⁶⁶ RMA commented that requiring tire test data or calculated values to be submitted to NHTSA to assure compliance is overly broad, costly, and unnecessary to meet the requirements of the EISA or ensure compliance. Further, RMA stated that reporting this type of information would cause tire manufacturers to suffer competitive harm because a company's approach to risk would be accessible by competitors.

From a legal standpoint, the RMA had concerns that direct submission of test data values circumvents NHTSA procedures to determine whether such information qualifies for confidential treatment as is done in safety investigations, is overly burdensome, and conflicts with the Paperwork Reduction Act. The RMA contended that competitors would not be able to determine RRF rolling resistance values, which they consider proprietary, from the fuel efficiency rating on the sticker and the published formulas. Therefore, a government database would give competitors access to tire characteristics without the expense of testing and calculations, thus causing competitive harm. RMA expressed worries that competitors could send misconstrued data to another producer's dealers, which would strain the producer-dealer relationship. RMA also commented that making data publicly available is likely to confuse the public and result in unintended misuse and misunderstandings of the data, and may be used in contexts that prejudice RMA members.

JATMA did not support the requirement to report average and adjusted peak coefficients of friction for asphalt and concrete.²⁶⁷

NRDC supported requiring manufacturers to report rolling resistance data for all replacement tire models offered for sale.²⁶⁸ NRDC commented that to correct the lack of

²⁶⁶ RMA Comments, Docket No. NHTSA-2008-0121-0036.1 at 11-12; RMA Comments Appendix 3, Docket No. NHTSA-2008-0121-0036.4 at 8-17.

²⁶⁷ JATMA Comments, Docket No. NHTSA-2008-0121-0031.1 at 1.

²⁶⁸ NRDC Comments, Docket No. NHTSA-2008-0121-0040.1 at 2-4.

consumer information market failure effectively, the rating system must be based on credible information. NRDC further argued that by requiring data reporting, NHTSA can use independent testing to verify manufacturer rating claims. Additionally, NRDC stated that fully disclosed rolling resistance data will make it suitable for widely-recognized endorsement labels like Energy Star or SmartWay.

Ford recommended that tire's test load information be provided to consumers since the test is performed at a fixed percentage of a tire's maximum load.²⁶⁹ Therefore, the consumer and retailer might be confused when they observe significantly different rolling resistance rating for different sizes within a tire line.

Agency response: Based on comments, the agency is significantly decreasing the scope of data manufacturers are required to submit under this program from ten items to only the three ratings, eliminating any proposed requirements for detailed test data. In specific, the agency will require manufacturers to report for each tire rated under this program the following data:

- Rolling Resistance rating, based on the rating formula established in a future notice finalizing the consumer information component of the program.
- Wet Traction rating, based on the rating formula established in a future notice finalizing the consumer information component of the program.
- Treadwear rating, based on the rating formula established in a future notice finalizing the consumer information component of the program.
- Which tire models and sizes it manufactures which the manufacturer are claiming are excluded under the applicability of this rule and, thus, are not rated.

²⁶⁹ Ford Comments, Docket No. NHTSA-2008-0121-0038.1 at 3.

The agency agrees with the RMA's comments that data submission is not specifically required by statute. However, the agency is requiring the three ratings for each tire in the system in order to provide consumers with a database that allows cross-comparisons of tire brands, and for the functioning of the online fuel economy calculator. Requiring data submission is not contrary to NHTSA practice, as the agency requires data submission in other programs, such as the Early Warning Reporting (EWR) data submission requirements for tire manufacturers.

Citing the lack of mandatory data submission for tire safety standards as a basis for not requiring data submission for consumer information overlooks the purpose of the two types of regulations. The purpose of the tire safety standards is to establish minimum safety performance requirements for new tires sold in the United States. Self-certification under the safety standards generates the consumer information on performance, as all tires sold in this market must achieve a "Pass" in a "Pass/Fail" test. In contrast, consumer information standards additionally contain relative levels of performance that must be communicated to consumers.

In terms of past practice, when UTQGS was designed in the 1960s, online databases did not exist. Information for that consumer information program was molded on the tire by the manufacturer in hopes that consumers would be able to weigh relative choices at the point of sale. Today, it is common for consumers to conduct online research in advance of purchases, or even purchase tires online. Requiring tire manufacturers to submit their ratings for each tire SKU rated will allow NHTSA to give consumers one central database for tire ratings. With all tire ratings on NHTSA's website cross-comparisons of tire performance characteristics will be far more effective than if consumers had to visit the websites of multiple manufacturers and vendors. Compliance audits of manufacturers may be sufficient to assure that the reported ratings are accurate, but it does not make information for all rated tires available to consumers.

It is significantly more cost-effective to require tire manufacturers to submit the ratings to the agency than NHTSA creating the database itself due to the time and labor the government would need to expend to collect all the ratings for 20,000 tire SKUs.

In terms of data submission being costly, mandatory submission of data does not require any manufacturer to conduct any additional tests on top of what they would need to do to self-certify the ratings given to the tires.²⁷⁰ The only direct costs borne by a manufacturer due to a data reporting requirement are those of the actual collection and submission of the data. However, each tire manufacturer already collects information on each SKU to submit for EWR data submission requirements.²⁷¹ Therefore, adding a few more columns onto that submission, as discussed immediately below, will not be a significant additive cost.

The agency has agreed to not require submission of the base test values from which tire manufacturers calculate the ratings based on comments that it would make public each manufacturer's statistical approach to risk in terms of how each manufacturer is rating tires to prevent the possibility of non-compliance. Should a non-compliance of a tire arise, the agency has sufficient regulatory processes to obtain the base test values from the manufacturers used to generate the ratings.

NHTSA finds technical merit in Ford's request that the actual test load of the tire be provided to consumers to provide context on why rolling resistance may vary by vehicle application. However, this information is far too complex and confusing for the average consumer to understand and would add unnecessary cost. The agency's tire website will note

²⁷⁰ See section III.A.5 of this notice for a discussion of self certification.

²⁷¹ Responding to the Transportation Recall Enhancement, Accountability, and Documentation (TREAD) Act requirements in 2002, NHTSA issued rules requiring that motor vehicle and equipment manufacturers provide communications regarding defective equipment, information on foreign safety recalls and certain early warning data. 49 CFR Part 579; *see* Final Rule, Reporting of Information and Documents About Potential Defects Retention of Records That Could Indicate Defects, 67 FR 45822 (July 10, 2002); Final Rule, Reporting of Information About Foreign Safety Recalls and Campaigns Related to Potential Defects, 67 FR 63295 (Oct. 11, 2002).

that the tire fuel efficiency rating is derived from a measure of a tire's rolling resistance at a fixed percentage of a tire's maximum load, and that rolling resistance can vary based on a tire's load.

Excluded tires: In the NPRM, NHTSA requested comments on whether it should mandate in the manufacturer reporting requirements that each manufacturer include with its reports a list of all tire models and sizes that it is claiming are excluded from today's proposed requirements. The NPRM explained that the limited production exclusion is not obvious just by examining the tire, and requiring manufacturers to report this information would allow NHTSA to quickly verify whether or not the lack of a label was an enforcement concern.

The Specialty Equipment Market Association (SEMA) opposed the requirement that tire manufacturers report which limited production tires they manufacture which are excluded from the label requirements of this rule.²⁷² SEMA commented that the exclusion of certain tires recognizes that the limited production tire manufacturers are small businesses and that it would be cost-prohibitive to apply the consumer information requirements, in any form, to these companies. Further, SEMA commented that consumers purchasing specialized tires that fall under the exemption will not be seeking comparative fuel efficiency ratings for these tires, because consumers purchase these specialized tires based on factors and requirements other than fuel efficiency (e.g., style, performance, specialized shape and size). Accordingly, SEMA stated that there would not be any consumer confusion in the marketplace on why these specialized tires do not have fuel efficiency ratings. SEMA stated that if NHTSA believes it must require the reporting of excluded tires, however, that it should be in the form of a one-time statement from tire manufacturers that are claiming the exemption, rather than requiring them to submit this information in the EWR data submission.

²⁷² SEMA Comments, Docket No. NHTSA-2008-0121-0045.1 at 2.

Michelin expressed support for requiring the reporting of tires that qualify for the low volume exemption and are not rated or have performance grades substituted.²⁷³ Michelin commented that making public this data will provide better quality information for consumers in that it will prevent uncertainties as to why consumers cannot find information on a particular tire.

ICCT agreed that manufacturers should be required to report which tires are exempted, and the basis for the exemption.²⁷⁴ ICCT further commented that the exemption data should be included in the NHTSA database to inform consumers that those tires have been excluded.

Agency response: The agency has decided to require the submission of information on excluded tires in the reporting requirements. For manufacturers that are otherwise required to report ratings data, this information should be included with those data submissions. For manufacturers that only produce limited production tires, or other tires that are excluded from the applicability of today's program, these manufacturers must provide a one-time list of each one of its tire models/sizes, and a statement that every one of its tire models/sizes are excluded from the applicability of this regulation and, thus, are not rated. When such a manufacturer introduces a new tire model or size that it also believes is excluded under the rule, it must send a statement declaring as such to NHTSA 30 days before it is first offered for sale.

NHTSA agrees with Michelin and ICCT that this information would be useful to consumers who wish to understand which tires are not rated and why. Thus, NHTSA will make this information available on its tire website.

Requiring the submission of which tires are not rated because they are excluded under the statute will not be an additional burden for manufacturers that are already required to submit

²⁷³ Michelin Comments, Docket No. NHTSA-2008-0121-0048.1 at 13.

²⁷⁴ ICCT Comments, Docket No. NHTSA-2008-0121-0042.1 at 2.

periodic production data under EWR requirements.²⁷⁵ Allowing a one-time statement from manufacturers who only produce tires that are excluded from applicability of this final rule will impose a minimal burden on those manufacturers.

Format of the data submission: The NPRM requested comment on what format to require tire manufacturers to submit data. NHTSA proposed that the agency will design a Microsoft Excel template for data submission and will make this template available for download from the agency website. The NPRM explained that NHTSA was also looking into using an online data submission system and the possibility of creating one centralized location where tire manufacturers will submit all required data submissions. The agency sought comment on the feasibility of using both a spreadsheet template and an online data reporting system for having tire manufactures submit data for the fuel efficiency consumer information program ratings. No commenter submitted suggestions regarding methods for data submission.

NHTSA will require that the rating information for each SKU to be submitted as new columns in the EWR submission. Tire manufacturers are currently required to report quarterly production information separately with respect to each tire line, size, SKU, plant where manufactured, and model year of tire manufactured during the reporting period and the four calendar years prior to the reporting period, including tire lines no longer in production.²⁷⁶ The required production information includes whether the tire is approved for use as original equipment on a motor vehicle, if so, the make, model, and model year of each vehicle for which it is approved, the production year, the cumulative warranty production, and the cumulative total production through the end of the reporting period. As such, submitting the ratings with the EWR submissions is simply a matter of adding on three columns of data for each tire SKU.

²⁷⁵ 49 CFR § 579.26.

²⁷⁶ 49 CFR § 579.26.

Since the three ratings for the tires will be submitted as new columns in the EWR submission, the identifying information for each tire will follow the current format specified in EWR. It would also mean that this information would be submitted quarterly. The exact format of the new reporting requirements (namely the additional reporting columns for the three ratings and exemption designation) will be issued in a subsequent update to the EWR reporting compendium, which is currently available at: <http://www-odi.nhtsa.dot.gov/ewr/ewr.cfm>. NHTSA will take the ratings information from the EWR submissions and create a database with all ratings that can be used on NHTSA's comprehensive tire website to view comparative tire information and so that the fuel efficiency rating can be used to estimate fuel savings for consumers on the website. Accordingly, this submitted data would be considered public information. The agency recognizes that some information submitted via EWR data submission requirements is non-public and this new submission would not change the status of those categories of data.

In summary, the data reporting requirements for the final regulation are to be reported as extra columns in the EWR submissions that each tire manufacturer already submits to the agency. The data reported must include the rolling resistance, wet traction, and treadwear ratings, which will be based on rating formulas established in a future notice finalizing the consumer information and education portions of the tire fuel efficiency consumer information program. In addition, any tire manufacturer that manufactures tire models and sizes it is claiming are excluded under the applicability of this rule must report at least once to the agency which tire models and sizes it is claiming are excluded. If a manufacturer that is reporting its ratings using its periodic EWR submission manufactures tires that are excluded from the applicability of this rule, then it may report those tire models and sizes as extra rows in its EWR

submission. Any manufacturer that introduces a new tire brand, model, size, or construction that it believes is excluded under this rule, must report to the agency at least 30 days before the tire is first offered for sale to consumers.

C. Uniform tire quality grading standards

As mentioned above and discussed in the NPRM, NHTSA has a tire rating system that has been in place since 1975, the uniform tire quality grading standards (UTQGS).²⁷⁷ NHTSA established the UTQGS to fulfill a statutory requirement established by Title II, Tire Safety, of the National Traffic and Motor Vehicle Safety Act of 1966.²⁷⁸ This statutory requirement has been codified and amended to read as follows:

The Secretary shall prescribe through standards a uniform quality grading system for motor vehicle tires to help consumers make an informed choice when purchasing tires. The Secretary also shall cooperate with industry and the Federal Trade Commission to the greatest extent practicable to eliminate deceptive and confusing tire nomenclature and marketing practices. A tire standard or regulation prescribed under this chapter supersedes an order or administrative interpretation of the Commission.²⁷⁹

The UTQGS, applicable to passenger car tires, require motor vehicle and tire manufacturers to provide consumers with information about their tires' relative performance regarding treadwear, traction, and temperature resistance. Manufacturers are required to rate their tires based on performance in specified test procedures,²⁸⁰ to report those ratings to NHTSA,²⁸¹ to permanently mold those ratings onto sidewalls,²⁸² to attach a label containing those ratings on replacement tires,²⁸³ and to provide information about the UTQGS with tires and

²⁷⁷ See 49 CFR § 575.104 (2008).

²⁷⁸ See National Traffic and Motor Vehicle Safety Act of 1966, Pub. L. 89-563, § 203, 80 Stat. 718 (1966) (recodified as amended at 49 U.S.C. § 30123(b)).

²⁷⁹ 49 U.S.C. § 30123(b).

²⁸⁰ 49 CFR § 575.104(d)(1)(i).

²⁸¹ 49 CFR § 575.6(d)(2).

²⁸² 49 CFR § 575.104(d)(1)(i)(A).

²⁸³ 49 CFR § 575.104(d)(1)(i)(B).

new motor vehicles.²⁸⁴ As explained in the NPRM, the treadwear, traction, and temperature resistance characteristics were chosen by NHTSA for rating under the UTQGS because when the UTQGS regulations were promulgated the agency believed they provided the best balance of tire properties for meaningful evaluation by consumers.

As NHTSA is basing the safety and durability ratings on the test procedures for UTQGS traction and treadwear test procedures, these characteristics were discussed above. As explained in the NPRM, the UTQGS temperature rating indicates the tire's resistance to the generation of heat and its ability to dissipate heat. Sustained high temperature can cause the material of the tire to degrade and reduce tire life, and excessive temperature can lead to sudden tire failure. Tires are tested under controlled conditions on a high-speed laboratory test wheel. Tires are graded A, B, or C, with A indicating an ability to dissipate heat at higher speeds. While grade C originally corresponded to a level of performance required for passenger car tires by FMVSS No. 109, new requirements in FMVSS No. 139 mean that few, if any, new tires perform below the level of grade B.²⁸⁵

In 1995, NHTSA proposed amendments to the UTQGS.²⁸⁶ At that time, NHTSA proposed, based on comments from the public,²⁸⁷ to remove the temperature resistance rating and to add a fuel efficiency rating. It was believed that the temperature resistance rating was not as well understood by consumers as the treadwear and traction ratings.²⁸⁸ The rulemaking was terminated²⁸⁹ because Congress placed a condition in NHTSA's 1996 Appropriations Act that

²⁸⁴ 49 CFR § 575.104(d)(1)(ii)-(iv).

²⁸⁵ UTQGS requires tires to be rated a C if they perform at the lowest level in the UTQGS test. If a tire performs at a higher level the manufacturer *may* rate the tire a B. Therefore, while there may still be grade C tires on the market, NHTSA expects that the tires could be rated a B, based on the requirements of FMVSS No. 139. *See* 49 CFR § 571.139.

²⁸⁶ 60 FR 27472 (May 24, 1995).

²⁸⁷ *See* Request for Comments, 59 FR 19686 (Apr. 25, 1994).

²⁸⁸ *Id.* at 19689.

²⁸⁹ *See* 61 FR 47437 (Sept. 9, 1996).

stated “none of the funds appropriated by this Act may be obligated or expended to plan, finalize, or implement any rulemaking to add to [the UTQGS] any requirement pertaining to a grading standard that is different from the three grading standards (treadwear, traction, and temperature resistance) already in effect.”²⁹⁰ This language has been included in every DOT Appropriations Act since 1996.

In developing NHTSA’s proposal, we considered the need and appropriateness of continuing the current UTQGS requirements. The NPRM explained that NHTSA tentatively concluded that the current UTQGS requirements should either be removed, once tires meet the new EISA requirements, or amended to conform to the approach in today’s EISA proposal.

RMA, Michelin, Tire Rack, and Consumers Union supported removing the UTQGS requirements citing potential confusion with two different rating systems.

RMA supported replacing the existing UTQGS traction and treadwear ratings with the ratings imposed under the tire fuel efficiency consumer information program and removing the UTQGS temperature grading.²⁹¹ RMA agreed with NHTSA’s interpretation of the current DOT Appropriations Act language that NHTSA has the authority to make the changes to the UTQGS regulation contemplated by the NPRM’s second UTQGS alternative: that the UTQGS requirements could be amended to conform with today’s requirements. RMA and Michelin both noted that since the new safety rating system would be based on different test criteria, some products rated highly in the current UTQGS system could rate lower under a proposed peak coefficient of friction-based safety rating, which may lead to consumer confusion.²⁹²

²⁹⁰ Department of Transportation and Related Agencies Appropriations Act for Fiscal Year 1996, Pub. L. No. 104-50, 109 Stat. 436 (1995).

²⁹¹ RMA Comments, Docket No. NHTSA-2008-0121-0036.1 at 13.

²⁹² *Id.* at 11; Michelin Comments, Docket No. NHSTA-2008-0121-0048.1 at 8-9.

Consumers Union recommended that the new label replace the present UTQGS ratings requirements.²⁹³ Consumers Union commented that consumer confusion would result from presenting treadwear in two different rating formats. Further, Consumers Union stated that UTQGS traction grading and the proposed wet traction rating were different and could be misinterpreted by consumers. Consumers Union also commented that the current UTQGS grading of temperature is basically a two rating system (“As” and “Bs”) because virtually no tires are awarded a “C” rating. Consumers Union, thus, suggested that NHTSA remove the UTQGS sidewall molding requirement and replace those sidewall ratings with the ratings established today molded onto the tire. Consumers Union recognized that legally NHTSA may not be able to pursue that approach at this time, but it urged the agency to monitor consumer understanding of the labeling system and perhaps seek the authority for such a change, if necessary.

Tire Rack suggested that the UTQGS branding and labeling requirements be eliminated.²⁹⁴ Tire Rack stated that it believes maintaining existing UTQGS ratings and tire molding would prove confusing to consumers. Further, Tire Rack commented that the proposed rating systems for durability (treadwear) and safety (wet traction) serve the same purpose as the corresponding existing UTQGS ratings.

ExxonMobil commented that since no statistical correlation is found between the measured RRF or calculated RRC values and the UTQGS ratings, the current UTQGS system cannot be easily extended to include a tire fuel efficiency rating.²⁹⁵ ExxonMobil stated that the new system proposed by NHTSA is more advantageous as an educational tool than the UTQGS

²⁹³ Consumers Union Comments, Docket No. NHTSA-2008-0121-0034 at 3-4.

²⁹⁴ Tire Rack Comments, Docket No. NHTSA-2008-0121-0026.1 at 6.

²⁹⁵ ExxonMobil Comments, Docket No. NHTSA-2008-0121-0044.1 at 10.

rating system since it provides actual numbers for consumers to judge potential tire quality at the time of purchase.

Public Citizen et al. supported NHTSA continuing to provide the temperature resistance rating along with other UTQGS ratings, and recommended that temperature resistance should be incorporated into the new tire labels.²⁹⁶ Public Citizen et al. commented that NHTSA has been blocked from making the proposed changes to the UTQGS by the condition contained in the DOT Appropriations Act each year since 1996. Further, Public Citizen et al. argued that this appropriations rider has forestalled more detailed study into the consequences of discontinuing the temperature resistance rating. In addition, Public Citizen et al. pointed out that Federal Motor Vehicle Safety Standard (FMVSS) No. 109, New Pneumatic and Certain Specialty Tires, was upgraded in 2003 and that the new standard raised the test speeds, which reduces concern that discontinuing the temperature rating diminishes information about tire performance at higher speeds.²⁹⁷ However, Public Citizen et al. stated that the temperature rating provides information about tire safety and durability that is substantially different from the rolling resistance and treadwear ratings. Therefore, Public Citizen et al. commented that the UTQGS temperature resistance grading will continue to provide the information in a format that is useful to consumers. Public Citizen et al. expressed skepticism at the perceived implication in the NPRM that temperature ratings are not useful because consumers are not familiar with them.

Agency response: The agency agrees with commenters that suggested that having tires labeled with two different rating scales for safety and durability potentially could be confusing to some consumers. NHTSA also recognizes, as some commenters pointed out, the potential confusion that might be caused if the safety rating established under this program is different

²⁹⁶ Public Citizen et al. Comments, Docket No. NHTSA-2008-0121-0043.1 at 3-4.

²⁹⁷ 68 FR 38117 (June 26, 2003).

than the UTQGS safety rating. On the other hand, NHTSA also agrees with Public Citizen et al. that NHTSA has not recently studied in detailed the consequences of discontinuing the temperature resistance rating.

For these reasons, NHTSA is retaining the UTQGS requirements at this time, including the UTQGS treadwear, traction, and temperature resistance ratings. However, if a future final rule finalizes that ratings under the tire fuel efficiency consumer information must be printed on a paper label on each passenger car replacement tire, NHTSA will consider removing the UTQGS requirement of molding UTQGS ratings onto tires, and the UTQGS requirement printing UTQGS information on the paper tire label when a tire is labeled in accordance with the tire fuel efficiency consumer information program requirements. The requirements to report UTQGS grading information to NHTSA would remain. As such, the UTQGS ratings would still be available to interested consumers, vehicle manufacturers, and tire retailers, but a consumer looking at a tire would not be confronted with different and confusing rating scales. NHTSA wants to study further the likely consequences of discontinuing the temperature resistance rating before making a decision about the future UTQGS requirements. NHTSA is making no changes to UTQGS requirements in this final rule.

Ideally the agency would combine the two programs since both the UTQGS statutory authority and the EISA authority call for regulatory programs intended to educate consumers about tires. That is, under the first alternative discussed in the NPRM (removing the UTQGS ratings), NHTSA contemplated announcing that the ratings established under this new program satisfied both the EISA statutory directive and the statutory authority under which the UTQGS ratings were created. However, NHTSA has concerns that the appropriations rider would be triggered by the inclusion of the fuel efficiency rating in today's rating system.

As for the second alternative contemplated in the NPRM (amending the UTQGS requirements to conform to the new ratings), NHTSA agrees with Public Citizen et al. that NHTSA does not have current research to show that temperature resistance is not a useful additional piece of information for consumers. In a 1995 NPRM, the agency concluded that most consumers are not aware of and/or do not understand the significance of the temperature resistance rating.²⁹⁸ However, the agency has not explored the issue of consumer understanding of the temperature resistance rating since that time. Further, a 1994 Request for Comments on the issue of substituting a rolling resistance rating for temperature resistance drew comments from manufacturers who insisted that rolling resistance and temperature resistance are separate properties.²⁹⁹ They asserted that rolling resistance measures the energy consumed by the tire, while temperature resistance relates to the ability of the tire structure and materials to withstand the temperatures generated by the flexing of the rubber and its reinforced materials.³⁰⁰ The agency decided to propose elimination of the temperature resistance grading at that time mainly based on consumer research which showed that the temperature resistance rating was less understood and less useful to consumers than other tire performance ratings when making a decision.³⁰¹ The agency is not comfortable deleting a tire grading previously determined by the agency to be useful without both recent consumer research testing consumer understanding of the rating, and researching the continued need given the upgraded tire endurance requirements of FMVSS No. 139.³⁰²

VIII. NHTSA's consumer education program

²⁹⁸ See 60 FR 27472, 27478-27481.

²⁹⁹ See 59 FR 19686.

³⁰⁰ 60 FR at 27478.

³⁰¹ *Id.* at 27279.

³⁰² See 49 CFR § 571.139.

As noted elsewhere in the notice, section 111 of EISA requires that the tire fuel efficiency consumer information program for replacement tires include “a national tire maintenance consumer education program including, information on tire inflation pressure, alignment, rotation, and treadwear to maximize fuel efficiency, safety, and durability of replacement tires.” 49 U.S.C. § 32304A(a)(2)(D). NHTSA believes, and many commenters noted, that the consumer education portion of this tire fuel efficiency consumer education program will be an important factor in the success of the rating system. The consumer education program must be implemented in such a way as to get consumers to understand the importance of tire choice and tire maintenance, and that tires impact vehicle safety, fuel efficiency, and general operation. The new rating system will only be effective and useful, if the consumer education program is able to cultivate this interest and understanding with consumers.

For similar reasons discussed above, in order to have the full benefit of any new understanding of how consumers best comprehend information gained from the agency’s new consumer research, NHTSA will re-propose its ideas for the consumer education portion of the program in the supplemental NPRM on the consumer information and education portions of the tire fuel efficiency consumer information program. The supplemental NPRM will newly propose and seek comment on numerous ways that NHTSA could implement a consumer education program to inform consumers about the effect of tire properties and tire maintenance on vehicle fuel efficiency, safety, and durability. The supplemental NPRM will also discuss some of the messages that NHTSA believes will be key to a successful tire fuel efficiency consumer information program.

Within the next year NHTSA will begin developing a new government website on tires, which will be linked directly from <http://www.safercar.gov/>. It will contain all the information

on NHTSA's current tire website (also located within www.safercar.gov), as well as links to other useful websites that contain educational information about tire maintenance.³⁰³ In furtherance of the objectives of consumer education program, the supplemental NPRM will seek comment on the structure and content of the tire website. NHTSA's tire website will eventually contain a database of all tire rating information.

NHTSA is using consumer testing research to help maximize consumer understanding of the program and to develop communication materials to assist consumers in making more educated tire purchasing decisions. In the NPRM, NHTSA requested comments on the most effective way to establish and implement a consumer education program to fulfill the statutory requirements and purposes behind the tire fuel efficiency consumer information program. NHTSA received extensive comments about the messages the agency should convey and the strategic methods of communication NHTSA should employ when embarking on the consumer education portion of the tire fuel efficiency consumer information program. NHTSA will continue to consider all these comments moving forward with the supplemental NPRM discussed above.

IX. Benefits and costs

The agency's response to the specific comments about benefits and costs calculations are discussed below and in greater detail in the agency's Final Regulatory Impact Analysis (FRIA). ICCT and NRDC commented that NHTSA underestimated benefits that would result from the

³⁰³ NHTSA's current online tire information can be found at <http://www.nhtsa.gov/portal/site/nhtsa/menuitem.c6b5d461a04337a1ba7d9d1046108a0c/> and <http://www.safercar.gov/portal/site/safercar/menuitem.13dd5c887c7e1358fefe0a2f35a67789/?vgnextoid=0e0aaa8c16e35110VgnVCM1000002fd17898RCRD> (last accessed Sept. 24, 2009).

proposal.³⁰⁴ RMA commented that NHTSA overestimated benefits of the proposal and underestimated costs.³⁰⁵

A. Benefits

In the NPRM, the agency identified three categories of potential benefits (or disbenefits) from this rule: fuel economy, safety and durability.³⁰⁶ For each of these categories a significant unknown is likely consumer behavior in response to this program, and as a result of that, likely manufacturer reaction. For example, if consumers value fuel efficiency, but are unwilling to increase the price they pay for tires, tires with improved fuel efficiency, but decreased safety and/or durability may enter the market. If consumers care most about safety, and if tire manufacturers make a tradeoff between fuel economy and safety, one effect of this rule may be to increase safety while decreasing fuel economy. NHTSA would like to be able to quantify the value of all three categories of benefits/disbenefits under such a scenario and construct a range of likely scenarios to calculate the combined potential benefits of this rule. Other scenarios can also be imagined. NHTSA requested comments on how it might reduce the uncertainty regarding the anticipated outcomes of this proposal.

The NPRM further explained that in addition to the unknown reactions of consumers and manufacturers, calculating benefits is complicated by several additional factors. We explain these additional complications for each of the three rating systems in the remainder of this section.

³⁰⁴ NRDC Comments, Docket No. NHTSA-2008-0121-0040.1 at 7-8; ICCT Comments, Docket No. NHTSA-2008-0121-0042.1 at 1-2.

³⁰⁵ RMA Comments, Docket No. NHTSA-2008-0121-0036.1 at 14-15; RMA Comments Appendix 8, Docket No. NHTSA-2008-0121-0036.9 at 11-14.

³⁰⁶ As noted in the preamble, there are also benefits in terms of reductions in emissions of CO₂. Reductions in fuel consumption necessarily and directly result in reductions in those emissions.

For fuel efficiency, NHTSA would like the fuel efficiency rating to provide meaningful information relevant to their replacement purchase, e.g., with a statement such as “for every 10,000 miles driven, a difference of A on the fuel efficiency rating scale equates to B gallons of fuel saved when 4 tires are purchased, so a difference of C on the fuel efficiency rating scale means a savings of D gallons over 10,000 miles driven for the average vehicle.” Given such a statement, to calculate benefits for an individual tire purchase, if the driver knows the baseline fuel economy of the vehicle the tires will be mounted on, the fuel efficiency rating of two different replacement tires a consumer is considering purchasing, and the number of miles driven annually, the driver can calculate the reduction (or increase) in the number of gallons of fuel the driver will need, for one replacement tire versus another, to operate the vehicle for 10,000 miles. By using fuel price forecasts, a consumer could estimate the cost of that fuel, and make an economic decision about whether or not to buy those replacement tires.

To calculate fuel savings benefits for this rule, we would need to know how many consumers are likely to purchase lower (or higher) fuel efficiency rated tires as a result of the information in this program and the average reduction (or increase) in rolling resistance of the tires they purchase. Because the agency cannot foresee precisely how much today’s consumer information program will affect consumer tire purchasing behavior and cannot foresee the reduction in rolling resistance among improved tires (we estimate the potential range of rolling resistance improvement to be between 5 and 10 percent), the FRIA estimates benefits using a range of hypothetical assumptions regarding the extent to which the tire fuel efficiency consumer information program affects the replacement tire market. For example, if we assume that 1 percent of targeted tires (1.4 million tires) are improved and that the average reduction in rolling resistance is 5 percent, then under these hypothetical assumptions, the proposal is estimated to

save 3.0 million gallons of fuel and prevent the emission of 29,000 metric tons of CO₂ annually. The value of these savings through 2050 is \$11.6 million at a 3 percent discount rate.

Benefit estimates for the safety rating are more difficult to quantify. As noted, definitive information is lacking about likely consumer responses to these ratings. Even if such information were available, it is not as straight forward as it is for a fuel efficiency rating to develop a rule of thumb for the safety rating scale such as “each difference of X on the safety rating scale equates to Y percent fewer crashes and Z dollars less in resultant economic damages.”

For durability, the UTQGS treadwear test procedure results in a relative measurement of tread wear rate as compared to a control tire, which would be rated 100 on the UTQGS treadwear scale. A tire with a UTQGS treadwear rating of 200 should last twice as long as a tire rated a 100, and so forth. Several assumptions would need to be made to develop a rule of thumb for a durability rating scale of the form “each difference of X on the durability rating scale equates to a reduction of \$Y in tire purchases over the lifetime of the vehicle.” Tire lifetimes are complicated by factors such as: the vehicle the tire is mounted on, driving habits, tire maintenance, weather/environment/temperature, etc.

Fuel savings estimates: NRDC and ICCT commented that NHTSA may have underestimated the fuel economy benefits of the proposed rule.³⁰⁷ ICCT commented that benefits may be understated by as much as 40 percent due to a flaw in the agency’s estimate of the impact of reduced rolling resistance on fuel economy. ICCT noted that NHTSA’s testing used a two-wheeled dynamometer to calculate the impact of tire rolling resistance on fuel economy at 1 percent and 1.1 percent for city and highway driving, respectively. ICCT stated

³⁰⁷ NRDC Comments, Docket No. NHTSA-2008-0121-0040.1 at 7-8; ICCT Comments, Docket No. NHTSA-2008-0121-0042.1 at 1-2.

that the 2008 Impala used for the testing has 61 percent of its total weight on the drive wheels. According to ICCT, that means that the testing would only capture the effect of 61 percent of the on-road tire rolling resistance. The other 39 percent from the rear wheels is incorporated into the dynamometer load curve. ICCT stated that when the tires were changed to measure the fuel economy impact of tire rolling resistance, its understanding was that the 39 percent contribution from the rear wheels contained in the dynamometer load curve was not changed to reflect the benefits of improved rolling resistance from the rear wheels. ICCT commented that if this occurred, the benefits may be under-predicted by about 40 percent for similar front-wheel drive vehicles and perhaps more for rear-wheel drive. ICCT recommended that NHTSA re-assess this test method to make sure that the benefits of this important proposed program are properly understood.

NRDC similarly commented that NHTSA's fuel savings estimates from reduced rolling resistance could potentially be underestimated in dynamometer tests if the results computations account for tire changes on only two (instead of all four) of the wheels. NRDC requested that NHTSA clarify how it conducted the dynamometer testing and if the testing properly accounted for rolling resistance changes to all four tires.

Agency response: Based on data analysis conducted in response to these comments, NHTSA agrees with commenters that the effect of tire rolling resistance on vehicle fuel economy used in the NPRM and PRIA were underestimated. In response to the ICCT comments, we examined vehicle coastdown data and analyzed the effects on the fuel economy dynamometer coefficients versus changes in tire rolling resistance. We integrated these effects over the whole fuel economy cycle. From these data, we estimate that total fuel consumption vis-a-vis rolling resistance was underestimated by approximately 20 percent for all non-OE tires – not the 40

percent claimed by ICCT. Thus, we now believe that that a 10 percent reduction in rolling resistance increases fuel economy by 1.3 percent, as compared to the 1.1 percent we estimated in the PRIA, and have revised the benefits in the FRIA accordingly.

Since issuance of the NPRM, the Tire Rack has published a study of on-road vehicle fuel economy for a 2009 Toyota Prius using seven different tire models.³⁰⁸ Using the fuel economy results from the Prius, and the available tire rolling resistance data from other sources³⁰⁹ for five of the seven tire models, there was an approximate 1.38 percent improvement in fuel economy for a 10 percent decrease in RRF. This is only slightly higher than the agency's revised estimate of 1.30 percent.

Benefits not addressed: NRDC and ICCT commented that NHTSA should include the impacts on greenhouse gas (GHG) emissions (from both vehicle emissions and upstream refining/production emissions), other pollutants, and energy security in quantifying benefits.³¹⁰ These commenters stated that these benefits are important and are quantified under NHTSA's corporate average fuel economy (CAFE) regulatory impact analyses.

In a somewhat related comment, RMA stated that NHTSA should estimate and monetize GHG emissions impacts.³¹¹ RMA stated that because manufacturers will need to do additional tire treadwear testing, GHG emissions may increase.

Agency response: The FRIA contains additional computations of GHG impact – both the GHG emissions emitted by manufacturer testing and the GHG emission reductions as consumers buy more fuel efficient tires. In addition, CO₂ is emitted from refineries and other

³⁰⁸ See <http://www.tirerack.com/tires/tests/testDisplay.jsp?ttid=121> (last accessed Oct. 12, 2009).

³⁰⁹ RMA & ExxonMobil comments to the tire rolling resistance docket.

³¹⁰ NRDC Comments, Docket No. NHTSA-2008-0121-0040.1 at 2, 7-8; ICCT Comments, Docket No. NHTSA-2008-0121-0042.1 at 2.

³¹¹ RMA Comments Appendix 8, Docket No. NHTSA-2008-0121-0036.9 at 20-21.

sources to produce fuel and deliver it to gas stations, and so less fuel used by vehicles also translates to reduced CO₂ emissions from these sources (i.e., reduced upstream emissions).³¹²

Projected consumer response: RMA commented that NHTSA has no basis for assuming that between 2 and 10 percent of consumers will purchase tires with improved rolling resistance.³¹³ RMA stated that it believes the percent may well be less, since most consumers will not see the label until after they have purchased the tire, and the informational posters displayed at tire retailers will not contain information on the tires the consumer is considering purchasing. Thus, RMA contended that the PRIA overestimated benefits.

Agency response: The PRIA developed hypothetical estimates assuming that between 2 percent and 10 percent of targeted tires are improved and that the average reduction in rolling resistance among improved tires is between 5 percent and 10 percent. We acknowledge that many consumers may not see the ratings before they purchase their tires. However, we presume that based on consumer information requirements implemented in a forthcoming final rule, some will see the ratings when purchasing replacement tires, perhaps as a label on display tires, or on posters or on dealer advertisements for tires on sales or on other promoted tires, or on manufacturer or dealer websites for consumers who conduct internet research prior to visiting a dealer. In addition, salespersons at tire dealers may discuss the ratings or show ratings to consumers to display the favorable properties of tire models they wish to promote. In addition, some consumers may see the ratings through other facets of NHTSA's consumer education program.

Based on general economic principles, we expect these sources of information about the new rating system to increase demand for tires that have some degree of improvement in all three

³¹² As in the agency's most recent rulemaking on Corporate Average Fuel Economy, we only considered upstream emissions that would occur in the U.S. ("domestic upstream emissions").

³¹³ RMA Comments Appendix 8, Docket No. NHTSA-2008-0121-0036.9 at 2, 17, 20-21.

areas of tire performance (wet traction, fuel efficiency, and treadwear). However, at this point the agency can't predict how the market will react to the program. In addition, NHTSA's consumer research results on the amount of money consumers would pay for a tire with a higher rating in one of the three scales indicate that consumers who see the ratings (through one of the sources in the previous paragraph) are likely to buy tires with some degree of improvement in all three areas.

The agency's expert assessment is that the rolling resistance of tires can be reduced while sacrificing neither traction nor treadwear at a cost of about \$3 per tire. NHTSA's recent consumer research indicates that buyers would pay between \$4 and \$5 more per tire for improved fuel efficiency. Therefore, we believe that, while there will be consumers who, when presented with tire ratings, would choose to sacrifice fuel efficiency for traction or treadwear, in general consumers will drive a market for tires that have improved fuel efficiency with little or no reduction in traction and treadwear.

For analytical purposes, NHTSA examined a hypothetical example assuming that 1 percent of eligible replacement tires would have 5 percent improved rolling resistance. Other estimates of more tires or better reduction in rolling resistance can be determined by simply multiplying the results of the example calculations by factors. NHTSA's expert assessment continues to be (as in the PRIA) that the average rolling resistance of improved tires can be reduced by between 5 percent and 10 percent.

B. Costs³¹⁴

For this final rule, there are three sets of costs involved for tire manufacturers: costs to test tires to obtain rating information, costs of reporting ratings to NHTSA, and, assuming the program induces consumers to demand and manufacturers to produce improved tires, costs to

³¹⁴ All costs discussed below are presented in 2008 economics.

improve tires. If consumers use the ratings information to purchase tires and demand different tires, or if manufacturers believe the information will have such an effect, there will be costs that manufacturers will spend to improve tires.

The NPRM and the PRIA explained that these costs are difficult to estimate. There are many different ways that a manufacturer might chose to improve the rolling resistance rating of their tires. The PRIA estimated that the increased cost at the consumer level of such improvements is \$2.00 to \$4.00 per tire for tires subject to this regulation if all other tire properties were held constant.³¹⁵ However, total costs for this category are dependent on market demand for different tires as a result of this program. The PRIA assumed that between 2 and 10 percent of the targeted tire population will be improved as a result of the proposal. Under this assumption and using a cost of \$3 to improve the rolling resistance of one tire, the agency estimated the costs to improve tires to be between \$8.5 and \$42 million. The agency requested comments on this cost estimate.

Based on a report from Smithers Scientific Services, Inc. (Smithers) presented at the February 5, 2009 Staff Workshop for the California Energy Commission's Fuel Efficient Tire Program, there are 20,708 tires that would need to be tested initially to provide information for each SKU. If each one of these were tested once for tire rolling resistance, the initial costs to the industry would be \$3,727,000. Based upon the average number of reports the agency receives under the UTQGS program, the agency estimated that 125 new/redesigned tires would need to be tested annually, for ongoing testing costs of \$22,500. Since the UTQGS already requires testing

³¹⁵ This is the cost to reduce rolling resistance by 10 percent from today's average replacement tire rolling resistance, holding other tire properties constant. Using silica is a well known method. There are a variety of ways to improve rolling resistance and not hold other properties constant, with different cost implications. That is one reason that the agency believes it is important to have rolling resistance, traction, and treadwear on the same label.

for treadwear and traction, the PRIA explained that those costs are already in the baseline and were not incremental costs of the agency's proposal.

The PRIA explained that information program costs include manufacturer costs to report information to NHTSA and to label tires. Since NHTSA is not requiring tire manufacturers label tires at this time, the manufacturer costs to label tires is not a consideration in the FRIA accompanying this final rule. NHTSA will account for costs of a label when the requirement is re-proposed in the supplementary NPRM addressing consumer information requirements.

Tire manufacturers are required to provide information to NHTSA on the rating system. NHTSA proposed to require manufacturers to report to NHTSA for each tire that is individually rated under the tire fuel efficiency consumer information program data on each of the three ratings: fuel efficiency, traction, and treadwear. There are 20 tire manufacturers that report to the agency under NHTSA's Early Warning Reporting (EWR) data submission requirements. The PRIA and NPRM explained that each manufacturer would need to set up the software in a computer program to combine the testing information, organize it for NHTSA's use, etc. We estimated this cost to be a one-time cost of about \$10,000 per company. In the analysis of the EWR data submission requirements, we estimated the annual cost per report per tire manufacturer to be \$287.³¹⁶ There are also computer maintenance costs of keeping the data up to date, etc. as tests are conducted throughout the year. In the EWR analysis, we estimated costs of \$3,755 per year per company. Thus, the PRIA and NPRM estimated the total annual cost is to be \$4,042 per company, and $\$280,000 + \$113,176 = \$393,176$ for the first year and \$113,176 as an annual cost for all 28 tire manufacturers.

³¹⁶ Preliminary Regulatory Evaluation, Tread Act Amendments to Early Warning Reporting Regulation Part 579 and Defect and Noncompliance Part 573, August 2008, (Docket No. 2008-0169-0007.1)

For tire retailers, the agency estimated that the proposal would have no cost. The only proposed requirements for retailers were to leave the label on the tire until it is sold and to display a poster. Since manufacturers would supply the label, and the NPRM proposed that NHTSA would supply the poster, the PRIA estimated there would be no cost to retailers. As noted above, because NHTSA is planning to re-propose the consumer information component of the program, tire retailer costs are not a consideration in the FRIA accompanying this final rule.

The PRIA explained that there are three sets of costs to the government: enforcement costs, costs for maintaining the website, and costs to provide the poster to retailers. As explained above, NHTSA will re-propose the consumer information requirements. Thus, NHTSA will not be providing posters to tire retailers at this time. NHTSA said it anticipated spending \$730,000 annually to do compliance testing for this program. Based on costs for the existing areas of the NHTSA website, NHTSA estimated that it would cost approximately \$550,000 per year to set up and update the part of the website to include information on 20,000 tires.

Testing costs: RMA commented that the PRIA underestimated costs of additional testing manufacturers would need to conduct under the proposed rule.³¹⁷ RMA estimates that the costs to its eight member companies alone would be \$14.7 to \$51.1 million in the first year and \$10.2 to \$27.2 million in subsequent years. RMA stated that manufacturers would need to do more treadwear and wet traction testing than estimated because under “worst case” final rule scenario (i.e., if manufacturers had to report the specific data values supporting a tire’s rating and noncompliance was determined using a tolerance band approach), tire companies would make upper end assumptions regarding equipment and labor needs and more SKUs would be need to be tested, rather than modeled, and some might even be tested more than once in order to narrow the confidence bounds and avoid violating the tolerance bands when reporting values. RMA

³¹⁷ RMA Comments Appendix 8, Docket No. NHTSA-2008-0121-0036.9 at 11-14.

commented that cost increases would involve both additional initial costs (testing equipment and costs to test existing SKUs) as well as ongoing annual costs (continuing testing costs to report values for each SKU). RMA commented that small increases in costs would result also from the need to report peak instead of slide values for the safety (wet traction) rating.

Agency response: First of all, as explained above in section VII.B.2, NHTSA is requiring only that tire manufacturers report to NHTSA the rating, and is not requiring the reporting of the underlying test values the rating is based on. We continue to believe that only one test per tire SKU will be necessary and that additional testing would be at the tire manufacturers' option, and will discuss this further in the discussion of enforcement approach in the supplemental NPRM on the consumer information component of this program.

Our concerns with RMA's testing cost estimates are discussed in the FRIA. Nonetheless, we acknowledge RMA's points that the PRIA neglected to include capital costs to purchase testing equipment, and that the agency likely underestimated the number of new SKUs produced annually, while overestimating the number of SKUs for sale each year. We used the industry estimates of SKU quantities that RMA provided for predicting the costs of the final rule. RMA's "best case" capital cost estimate of a one-time charge of \$10.7 million appears reasonable, as a combined cost to the industry. Our final testing cost estimates assume one test per SKU for rolling resistance, traction, and treadwear, however, it is possible that manufacturers could test far fewer tires. We believe that RMA's estimates of the cost to test a SKU for traction and treadwear are overstated.

The FRIA contains a full discussion of the agency's cost estimates, but in summary, NHTSA believes that we underestimated testing costs in the PRIA and are revising them. The FRIA estimates that capital costs will increase by \$10.7 million in the first year, tire testing costs

will increase by \$22.4 million in the first year and by \$3.8 million in subsequent years, resulting in total testing costs of \$33.1 million in the first year and \$3.8 million in subsequent years.

Label costs: RMA commented that NHTSA underestimated label costs to manufacturers.³¹⁸ RMA stated that tire manufacturers would have initial start-up costs of \$22 million to cover design set-up and printing equipment, and annual printing costs of \$11.5 million.

Agency response: NHTSA estimated a label cost of \$0.05 per tire resulting in a net label cost of \$9 million in the PRIA which is quite comparable with RMA's annual print cost of \$11.5 million. Since a final label has not been designed, NHTSA will not include label costs in the FRIA associated with this final rule. However, NHTSA notes that RMA incorrectly thought they would need to spend \$11 million labeling their existing inventory. The NPRM did not propose a requirement to label existing inventory.

Costs of improving tires: RMA's survey of members generally confirm NHTSA's estimates regarding the cost per tire to improve rolling resistance without sacrificing traction or treadwear.³¹⁹ NHTSA estimated the cost to improve the rolling resistance of tires to be between \$2 and \$4, depending upon the tire size, averaging \$3 per tire. RMA estimated the cost to improve the rolling resistance of tires to be between \$2 and \$6, depending upon the size, and averaging \$3 per tire.

Agency response: NHTSA has changed its range to between \$2 and \$6. This is reasonable because the bigger the tire, the more cost to add silica to get the desired effect. There are larger tires in the market than we considered with our general cost range, and if you look at the extreme, the cost per tire might be up to \$6. Regardless of the minimum and maximum cost

³¹⁸ RMA Comments Appendix 8, Docket No. NHTSA-2008-0121-0036.9 at 12-14.

³¹⁹ RMA Comments Appendix 8, Docket No. NHTSA-2008-0121-0036.9 at 14-15.

to improve the rolling resistance of tires, everyone agrees that the average price to upgrade the average tire is \$3 per tire.

Other costs: RMA commented that NHTSA has not estimated the costs of the decreased tire safety and durability that may result from the rule.³²⁰ RMA stated that NHTSA needs to do this, and when it does, the benefits of the rule will not justify the cost (even using NHTSA's values for the other cost estimates). RMA commented that improving rolling resistance will decrease traction and treadwear. RMA stated that NHTSA acknowledged in the Phase II Research Report (p. 47) that improving rolling resistance will worsen wet traction performance. Further, RMA pointed to NHTSA's data (p. 43 of Phase II Report) which shows that dry traction is also likely to worsen. RMA stated that NHTSA acknowledged that its labeling program may effectively exacerbate the traction problem by spurring consumers to sacrifice traction to save money. Regarding treadwear, RMA commented that NHTSA's PRIA stated that tread life may be lessened and a CEC report says tread life will lessen. Therefore, RMA commented that NHTSA needs to analyze the impact of the rule on fatalities, injuries, property damage, increased consumer spending on tires due to decreased tread life, and societal costs of producing additional tires.

RMA also commented that the PRIA does not treat first-year costs correctly.³²¹ RMA stated that NHTSA estimates first-year costs at \$4 million, but doesn't include them in the net benefits estimates. RMA suggested that NHTSA should include them by amortizing or annualizing the costs, or by estimating the net present value of the entire program. RMA makes specific suggestions on how to do this.

³²⁰ RMA Comments Appendix 8, Docket No. NHTSA-2008-0121-0036.9 at 17-20.

³²¹ RMA Comments Appendix 8, Docket No. NHTSA-2008-0121-0036.9 at 21.

Agency response: Regarding RMA's comment that NHTSA does not treat first-year costs correctly, all first-year costs are included in NHTSA's \$3 per tire cost estimate.

Regarding RMA's request that NHTSA estimate the costs of the decreased tire safety and durability that may result from the rule, we do not have enough information at the moment to estimate these impacts. Michelin provided data³²² that this tradeoff is not necessary, but we do not know with certainty. The NPRM and PRIA noted that this scenario would be particularly problematic if consumers are unwilling to spend additional money and/or tire manufacturers are unwilling to increase the cost of the tire to maintain high levels of wet traction and treadwear. We recognize there are opportunity costs to reducing rolling resistance that impacts safety and durability, but we don't have enough data to estimate impacts. Thus, we assume the cost of maintaining these parameters is already included in the \$3 of increased cost per tire. However, more information in terms of consumer reaction to the program will be developed in the future and will be used in the next analysis.

Overall, RMA commented that because NHTSA effectively projects possible negative net benefits, the rule is not justified.³²³ RMA stated that NHTSA needs to rework the rule to cut costs or not propose the rule. RMA suggested discarding the labeling idea in favor of training programs, educational materials provided to dealers, and better web tools for consumers.

Agency response: As noted above, this final rule does not include labeling costs because NHTSA is not requiring tire manufacturers to label tires at this time. However, NHTSA is likely to re-propose the label requirement, and even considering those additional annual labeling costs, NHTSA believes that this consumer information program is likely to be cost effective, and provide an overall benefit to society. NHTSA will, however, consider these RMA comments as

³²² Michelin Comments, Docket No. NHTSA-2008-021-0048 at 8.

³²³ RMA Comments Appendix 8, Docket No. NHTSA-2008-0121-0036.9 at 2-3, 16-17, 22-24.

it develops the next regulatory impact analysis for the supplementary NPRM on the consumer information and consumer education portions of the program.

X. Lead time

Lead time will be determined based on the timing of the final rules that will specify the requirements and content of the consumer information and the specification of a reference laboratory or laboratories. If the later of the final rules is the one in which NHTSA announces the selection of a reference laboratory or laboratories with the capability to test LATs, based on comments, and the time NHTSA needs to select a reference laboratory or laboratories with the capability to test lab alignment tires (LATs) for rolling resistance testing, NHTSA will require tire manufacturers to meet applicable requirements for replacement tires they manufacture in stages, by tire size. In that case, tire manufacturers must meet applicable requirement for 15 and 16-inch tires, the most popular rim sizes,³²⁴ first; tire manufacturers must meet applicable requirements for other passenger car tire sizes at a later date. This phase in would be tied to the publication of a final rule specifying the availability of certified LATs from the reference laboratory or laboratories. As noted above, in the near future NHTSA will announce one or more private laboratories to operate the reference test machine(s). The agency is working expeditiously to establish and implement procedures for the selection of a reference laboratory. Soon after, NHTSA will publish a Federal Register notice of the readiness of the reference laboratory or laboratories to provide LATs under ISO 28580.

If the final rule specifying the requirements and content of the consumer information portion of the program occurs after the final rule specifying the reference laboratory or

³²⁴ The *RMA Preliminary 2010 Factbook* estimated that 15 and 16-inch passenger replacement tires constituted about 22% of the replacement passenger tire sales in the U.S. in 2009. See Rubber Manufacturers Association, *Tire Industry Factbook*, available at http://www.rma.org/rma_resources/market_information/tire_industry/ (last accessed March 11, 2010).

laboratories, NHTSA may establish a lead time different from the phase in described above since tire manufacturers will have had since the final rule specifying the reference laboratory or laboratories to begin testing to the test procedures specified in this final rule. Recognizing the uncertainty of the rulemaking timeline for finalizing the requirements and content of the consumer information and consumer education portions of the tire fuel efficiency program, NHTSA will tie all compliance dates to the latter of the consumer information and education final rule, or the final rule announcing the availability of the reference laboratory or laboratories to test LATs under ISO 28580.

The NPRM explained that while manufacturers currently calculate the rolling resistance of at least some tires for vehicle manufacturers to use when selecting which tires to equip new vehicles with, NHTSA believes that lead time is necessary for tire manufacturers to conduct additional testing and to prepare rating information for all affected tires. In addition, time will be necessary for NHTSA to collect all reported rating information into a database and to prepare consumer information materials.

Tire manufacturers: NHTSA proposed to require manufacturers to report on all existing tires within 12 months of the issuance of a final regulation. For new tires introduced after the effective date of the rule, NHTSA proposed to require reporting of information at least 30 days prior to introducing the tire for sale, as is required for UTQGS information.

As explained in the NPRM, a Smithers Scientific Services, Inc. (Smithers) report presented at a February 2009 CEC staff workshop on CEC's Fuel Efficient Tire Program suggested that manufacturers need 0.2 to 2.4 years to test one replacement passenger car tire of each different tire SKU. However, NHTSA explained that we believe this number may be an over-estimate of the time needed to test and rate all tires affected by the proposed program.

Based on our research, NHTSA estimated it is possible that less than 25 percent of the affected tires will need to be tested in accordance with the ISO 28580 procedures in order to rate them for this program. The NPRM explained that it is likely that manufacturers will be able to develop equations to calculate the effect of differences in tread pattern, etc., and use those equations to compute the test results from ISO 28580 from other tires that have been tested. Tire manufacturers will be able to extrapolate estimates of the test procedure values from knowing the test procedure values of similar sized tires. In addition, NHTSA explained that manufacturers already have rolling resistance information on many, if not all tires, as this information is used by vehicle manufacturers when choosing which tires to install as original equipment. The NPRM explained that even if these data were gathered using other test methods, NHTSA's research shows that equations can translate the data to results that would be obtained from the ISO 28580 test procedure.

In comments to the NPRM, the European Commission requested more lead time without providing a rationale or a suggestion for an effective date.³²⁵ JATMA requested 2 years of lead time.³²⁶ JATMA commented that manufacturers will wait to test until the final rule is issued and that JATMA manufacturers will not want to contract out rolling resistance testing.

Michelin requested that if the new rating is implemented the requirements for UTQGS be modified and that adequate implementation times or some other considerations must be allowed to prevent large costs for mold replacement.³²⁷

RMA requested lead time of 24 months after the specification of a reference laboratory and availability of certified LATs to correlate rolling resistance testing.³²⁸ RMA commented that

³²⁵ European Commission Comments, Docket No. NHTSA-2008-0121-0028.1 at 3.

³²⁶ JATMA Comments, Docket No. NHTSA-2008-0121-0031.1 at 2.

³²⁷ Michelin Comments, Docket No. NHTSA-2008-0121-0048.1 at 9.

³²⁸ RMA Comments, Docket No. NHTSA-2008-0121-0036.1 at 9, 13-14.

logistical considerations regarding LATs and the reference laboratory indicate that it would be difficult if not impossible to meet the compliance date set forth in the proposal. Further, RMA stated that restrictive application of ISO 28580 would require significant capital investment to acquire sufficient test capacity to test applicable tires to the two specified measurement methods using an 80-grit surface. RMA additionally commented that basing the wet traction rating on peak coefficient of friction, rather than the current slide coefficient of friction-based wet traction rating under UTQGS will require additional testing of existing tires, since tire manufacturers do not have peak data available on sufficient existing tires to interpolate wet traction rating. RMA estimated that a minimum of 24 months is required to obtain reference tires, correlate to a reference laboratory, conduct sufficient testing, rate existing tires, and report ratings to NHTSA. RMA requested that the compliance date for the rule be tied to the availability of LATs.

RMA also asked for 6 months after the introduction of a new tire to report ratings to NHTSA and retailers “consistent with current UTQGS regulations.”

Agency response: Regarding the requests for additional lead time, NHTSA agrees with RMA that the lead time should be after the specification of a reference laboratory. As discussed above in section IV.B, the ISO 28580 test method specifies lab alignment procedures to account for lab-to-lab variability between different rolling resistance test machines. ISO 28580 specifies that the test method requires the specification of a reference laboratory (“Alignment Lab”), which will test LATs against which all other laboratories can align their measurements. NHTSA will select one or more private laboratories to be the Alignment Lab, but section IV.B explains that the agency will need some time to develop and implement the procedures for the selection of the Alignment Lab(s). For this reason, tire manufacturers cannot begin rating their tires for fuel efficiency until the reference lab is able to test and certify LATs. NHTSA will publish a Federal

Register notice of the reference lab or labs' readiness to test LATs under ISO 28580 soon after the agency selects an Alignment Lab or Labs.

Recognizing the uncertainty of the rulemaking timeline for finalizing the requirements and content of the consumer information and consumer education portions of the tire fuel efficiency program, NHTSA will tie all compliance dates to the latter of the consumer information and education final rule, or the final rule announcing the availability of the reference laboratory or laboratories to test LATs under ISO 28580. NHTSA intends to also announce in the latter of the two final rules noted above the first date by which tire manufacturers must submit required data to NHTSA on replacement tires, and replacement tires sold by the manufacturer or transferred to tire retailers must be labeled or include yet-to-be-determined consumer information material. If the later of the final rules is the one in which NHTSA announces the selection of a reference laboratory or laboratories with the capability to test LATs, for tires with 15 and 16-inch rim sizes, the compliance date would be approximately 12 months after the notice, and would correspond to the closest Early Warning Reporting (EWR) data submission requirement date,³²⁹ as manufacturers will be able to include the required data for this regulation with the EWR reports.³³⁰ For all other passenger car tire rim sizes, this date would be approximately 24 months after the notice, and would correspond to the closest EWR data submission requirement date.

If the final rule specifying the requirements and content of the consumer information portion of the program occurs after the final rule specifying the reference laboratory or

³²⁹ Responding to the Transportation Recall Enhancement, Accountability, and Documentation (TREAD) Act requirements in 2002, NHTSA issued rules requiring that motor vehicle and equipment manufacturers provide communications regarding defective equipment, information on foreign safety recalls and certain early warning data. 49 CFR Part 579; *see* Final Rule, Reporting of Information and Documents About Potential Defects Retention of Records That Could Indicate Defects, 67 FR 45822 (July 10, 2002); Final Rule, Reporting of Information About Foreign Safety Recalls and Campaigns Related to Potential Defects, 67 FR 63295 (Oct. 11, 2002).

³³⁰ NHTSA will expand the production reporting template to include the information required for this regulation. Those reports are due within 30 days of the end of each calendar quarter.

laboratories, NHTSA may establish a lead time different from the phase in described above since tire manufacturers will have had since the final rule specifying the reference laboratory or laboratories to begin testing to the test procedures specified in this final rule.

NHTSA has determined that upon the availability of LATs, manufacturers will be able to accurately rate all tires within 24 months. However, recognizing that the deadlines imposed by EISA indicate a desire to have information available to consumers as quickly as possible, NHTSA would phase in the availability of this consumer information. Because tires with 15 and 16 inch rim sizes make up more than 22 percent of sales in the replacement passenger car tire market, NHTSA believes there will be a significant benefit for requiring these most popular tire sizes to be rated as soon as possible.³³¹ In 2008, tires with 15 and 16 inch rim sizes represented approximately 33 percent of the tire sizes available in the market.³³² Therefore, NHTSA believes that tire manufacturers will be able to rate those tires within 12 months after the availability of LAT testing at the Alignment Lab or Labs.

To accurately rate all replacement passenger car tires, tire manufacturers need more than the 12 months proposed in the NPRM for two reasons. First, NHTSA acknowledges that the correlations between other rolling resistance tests and ISO 28580 have only been validated for the Smithers Scientific Services, Inc. (Smithers) and Standards Testing Laboratories (STL) labs, therefore, more time may be needed for correlating between other labs and the ISO test. While some manufacturers may have already begun testing using ISO 28580, given how recent the final ISO procedure was adopted, many probably have not.³³³ To have confidence that any prediction

³³¹ Nine out of the ten most popular tire size designations (by sales volume) are tires with 15 inch or 16 inch rim sizes. These nine tire size designations represent 23.2% of replacement passenger car tire sales. *See* RMA 2009 Tire Industry Factbook, *available at* https://www.rma.org/publications/market_information/index.cfm?PublicationID=11500 (last accessed Nov. 18, 2009).

³³² *Id.*

³³³ The ISO 28580 final test procedure was published on July 31, 2009.

of an ISO 28580 test score using the other rolling resistance test procedures would be within some reasonably specified compliance tolerance band, manufacturers will likely need time to validate correlation equations if they are using other machines/labs. The equations NHSTA provided in the Phase 2 research report to correlate the other SAE and ISO rolling resistance test methods have only been validated on the machines at Smithers and STL.

Second, NHTSA also agrees that manufacturers may need to correlate peak traction coefficients on the test surfaces at the NHTSA San Angelo Test Facility (SATF). Whenever tire manufacturers have provided the agency with tire traction data, these data have included peak and slide coefficients of friction. However, tire manufacturers or the laboratories that they hire often do not run test procedures at the same speed, water level, surface texture, etc. as NHTSA uses at the SATF. As with correlating different rolling resistance test data to another test, manufacturers are likely familiar enough with this testing to know they can replicate or predict the wet slide numbers from the SATF, even if their test procedure is different. However, tire manufacturers likely currently have little or no correlation to peak friction coefficient values at the SATF, since that information would not previously have been used for tire ratings. Therefore, it likely will take tire manufacturers more than a year to test enough tires to establish a correlation to include estimated values in the reporting formula.

As for the reporting of ratings for a new tire SKU that is introduced after the effective date of this regulation, RMA points to section 104(d)(A) of Part 575 of Title 49 Code of Federal Regulations (CFR) to support its contention that current UTQGS requirements allow a tire manufacturer 6 months to report tire ratings to NHTSA and tire retailers. We assume RMA is referring to section 104(d)(1)(i)(A), which states that “[e]xcept for a tire of a new tire line, manufactured within the first six months of production of the tire line, each tire shall be graded

with the words, letters, symbols, and figures specified in [the UTQGS regulation], permanently molded into or onto the tire sidewall” Thus, this requirement gives tire manufacturers six (6) months from the introduction of a new tire in a tire line to mold the ratings onto the sidewall of the tire. However, 49 CFR § 575.6(d)(2)(i) specifies that “[i]n the case of § 575.104, each brand name owner of tires, and each manufacturer of tires for which there is no brand name owner shall submit to the Administrator 2 copies of the information specified in [the UTQGS regulations] that is applicable to the tires offered for sale, at least 30 days before it is first provided for examination by prospective purchasers pursuant to paragraph (c) of this section.” In turn, section 575.6(c) states that “each brand name owner of tires ... shall provide for examination by prospective purchasers, at each location where its ... tires are offered for sale by a person with whom the ... brand name owner has a contractual, proprietary, or other legal relationship, or by a person who has such relationship with a distributor of the ... brand name owner concerning the ... tire in question, the information specified in [the UTQGS regulation] that is applicable to each of the ... tires offered for sale at that location.” This is the language that the proposed regulatory text was based on and NHTSA continues to believe that the 30 days prior to sale requirement is appropriate for new tires.

Tire retailers: NHTSA intends to announce in the final rule specifying the requirements and content of the consumer information and consumer education portion of the program the compliance dates for any tire retailer requirements established in that rulemaking.

Because NHTSA intends to conduct further testing and consultation before making decisions regarding consumer information materials, we cannot definitively announce at this point when any consumer information materials will be available.

XI. Enforcement

The NPRM explained that the proposed test procedures are the ones NHTSA would use for compliance testing. The NPRM also explained that while NHTSA was proposing to only consider finding a rating noncompliance if agency testing provided data that would give the tire in question a rating that was lower than that printed on the tire label (minimum requirement or “one-way zero tolerance”), the NPRM also discussed two-way tolerances for RRF, traction, and treadwear. Such a system would find a rating noncompliance if agency test results were outside of a specified tolerance band on either side of the rating.³³⁴ The two-way tolerances discussed in the NPRM were developed after the agency had considered the repeatability of a tire tested as well as the variability of machine-to-machine tests, lab-to-lab tests, rounding errors, and the potential for different results due to different manufacturing dates.

The NPRM explained that for UTQGS, NHTSA specifies a test procedure for each rating. For traction and temperature resistance, the regulation then sets a performance level at which the tire must be rated a C, and higher levels at which the manufacturer may rate it a B, A, or in the case of traction AA. The regulation was written this way as an acknowledgement of some level of necessary variability in the manufacture of tires. For tires that perform at a performance level that is near the border of two grades, the regulation allows the manufacturer to “underrate” to allow for the possibility that NHTSA might select a tire for compliance testing that would perform at the lower level. However, because the regulation does not limit

³³⁴ Tire Fuel Efficiency NPRM, *supra* note 9, at 29580.

manufacturers to “underrating” by only a single grade, UTQGS is often criticized for not providing consumers with “accurate” information.³³⁵

Despite such criticisms, NHTSA proposed to require the ratings assigned by a manufacturer under the proposed rule to be less than or equal to the rating determined by the agency using the specified procedures. In part this decision was based on concerns that the program would not result in a situation where NHTSA would be taking enforcement action against a manufacturer for the safety and durability ratings under the new rating program, when enforcement action would not be warranted for UTQGS ratings based on the same test procedures. NHTSA will discuss comments received on the NPRM enforcement approach in the supplemental NPRM re-proposing the consumer information and consumer education components of the program, which will include new proposed ratings formulas.

In addition to requiring rulemaking establishing a national tire fuel efficiency rating system and related requirements (49 U.S.C. § 32304A), Section 111 of EISA amends 49 U.S.C. § 32308 (General prohibitions, civil penalty, and enforcement) to provide that a person who fails to comply with the national tire fuel efficiency information program under section 32304A is liable to the Government for a civil penalty of not more than \$50,000 for each violation.³³⁶

RMA recommended that NHTSA define “each violation” to mean when a tire rating is improperly reported to NHTSA for a tire SKU. RMA asked NHTSA to clarify its intent and

³³⁵ For example, in the September 1996 final rule that amended the UTQGS by revising the treadwear testing procedures to eliminate treadwear grade inflation and other related issues, some commenters believed that the treadwear grade should be removed from the UTQGS because manufacturers treadwear warranties continued to improve and the treadwear label under the UTQGS become less significant for tire consumers. 61 FR 47437 (Sept. 9, 1996). However, NHTSA disagreed with the commenter because as one manufacturer acknowledged that the manufacturers warranties are not always based on test results and not all tires carry manufacturers’ warranties. *See also* Tire Rack, Tire Tech Information/General Tire Information (2009), *available at* <http://www.tirerack.com/tires/tiretech/techpage.jsp?techid=48> (last accessed Nov. 4, 2009) (“The problem with UTQG Treadwear Grades is that they are open to some interpretation on the part of the tire manufacturer because they are assigned after the tire has only experienced a little treadwear as it runs the 7,200 miles. This means that the tire manufacturers need to extrapolate their raw wear data when they are assigning Treadwear Grades, and that their grades can to some extent reflect how conservative or optimistic their marketing department is.”)

³³⁶ 49 U.S.C. § 32308(c).

provide opportunity to comment. NHTSA declines RMA's invitation. To begin, rulemaking on the meaning and scope of the EISA penalty provision is not within the directive of EISA's provision on what the rulemaking shall include.³³⁷ Second, the NPRM did not propose rulemaking on the meaning and scope of the penalty provision. In the absence of notice in the NPRM, it would be inappropriate to adopt a final rule on the meaning and scope of the penalty provision. RMA implicitly recognizes this, as it recommends that NHTSA provide an opportunity for comment. But, in general, the proper vehicle for such a request is a petition for rulemaking, not a comment on a NPRM. In the context of enforcement, we believe that it is appropriate to address the meaning of the EISA penalty provisions in the concrete context of a civil action under 49 U.S.C. § 32308 before a U.S. District Court. Courts have long determined the meaning and application of the terms of civil penalty statutes in the course of adjudicating civil penalty cases.³³⁸ In any event, NHTSA takes the position that the Government may seek a penalty of not more than \$50,000 for any violation of the rule that under the law a Court may find to be a separate violation.

XII. Regulatory alternatives

Throughout this final rule, in sections specific to various portions of the tire fuel efficiency consumer information program for replacement tires, NHTSA has discussed other options considered by the agency.

XIII. Conforming amendments to Part 575

³³⁷ See 49 U.S.C. § 32304A(a).

³³⁸ *United States v. ITT Continental Baking Co.*, 420 U.S. 223 (1975); *Borden Ranch Partnership v. U.S. Army Corps of Engineers*, 261 F.3d 810, 819 (9th Cir. 2001); *Public Interest Research Gp.v. Powell Duffryn Terminals, Inc.*, 913 F.2d 64, 77 - 80 (3d Cir. 1990); *Atlantic States Legal Foundation, Inc. v. Tyson Foods, Inc.*, 897 F.2d 1128, 1137 *et seq.* (11th Cir. 1990); *United States v. General Motors Corp.*, 565 F.2d 754, 761 - 62 (D.C. Cir.1977); *United States v. Phelps Dodge Indus., Inc.*, 589 F.Supp. 1340, 1362 (S.D. N.Y. 1984).

Because this final rule adds a new section to 49 CFR Part 575, the agency must modify the table of contents of Part 575. Additionally, we have modified the scope and definitions sections at the beginning of Part 575, 49 CFR §§ 575.1, 575.2, to be sufficiently broad to apply to all regulations contained in Part 575. Since the NPRM, the agency realized that the scope and definitions sections appeared to have not been modified since Part 575 was first promulgated in the 1970s. Since then NHTSA has added additional consumer information regulations to Part 575, including the agency's new car assessment program (NCAP) regulations, 49 CFR § 575.301. Thus, the agency believes that the generalized scope and definitions sections that apply to all of Part 575 should be expanded and modified as detailed in the regulatory text below. These changes do not substantively affect the regulations in Part 575, but merely clarify that Subpart A sections apply to all of Part 575, and that definitions in the NCAP regulations should refer to statutory definitions from NCAP's authorizing statute, the Automobile Information Disclosure Act, 15 U.S.C. Chapter 28, as opposed to the Safety Act.

Further, under 1 CFR part 51, Incorporation by Reference, the agency must declare that the Director of the Federal Register has approved incorporation by reference of a publication into a regulation. In this rule, the agency is amending the incorporation by reference provision at § 575.3, Matter incorporated by reference, to include a centralized index of all of the publications incorporated into Part 575. This is not intended to alter the substance any references, but merely to centralize all of the incorporation by references contained in Part 575. Also in this final rule we are updating the existing information in § 575.3 to include updated language in regard to incorporation of materials by reference, including new procedures for retrieving materials from the National Archives and Records Administration and a new format indicating the sections where incorporated materials are referenced.

Finally, this final rule also makes a number of changes to the regulatory text throughout the various sections of Parts 575. This is being done to standardize the reference to industry consensus standards incorporated by reference throughout Part 575, and to provide internal cross references back to the centralized incorporation by reference section, 49 CFR § 575.3, so that readers understand where they can find all materials incorporated by reference in Part 575.

XIV. Regulatory notices and analyses

A. Executive Order 12866 and DOT Regulatory Policies and Procedures

Executive Order 12866, “Regulatory Planning and Review” (58 FR 51735, Oct. 4, 1993), provides for making determinations whether a regulatory action is “significant” and therefore subject to Office of Management and Budget (OMB) review and to the requirements of the Executive Order. The Order defines a “significant regulatory action” as one that is likely to result in a rule that may:

- (1) Have an annual effect on the economy of \$100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local or Tribal governments or communities;
- (2) Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;
- (3) Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or
- (4) Raise novel legal or policy issues arising out of legal mandates, the President’s priorities, or the principles set forth in the Executive Order.

We have considered the impact of this rulemaking action under Executive Order 12866 and the Department of Transportation’s regulatory policies and procedures. The annual effect on

the economy of this rulemaking depends on consumer and manufacturer responses to the program. However, this rulemaking is significant due to public interest in the issues. Therefore, this document was reviewed by the Office of Management and Budget under E.O. 12866, “Regulatory Planning and Review.”

This document would amend 49 CFR Part 575 by adding a new section for requirements pursuant to the National Tire Fuel Efficiency Consumer Information Program. The agency has prepared a Final Regulatory Impact Analysis (FRIA) and placed it in the docket and on the agency’s website. If 1 percent of the targeted tire population (1.4 million) are improved at an average cost of \$3 per tire, the annual cost of NHTSA’s final rule is estimated to be \$9.3 million. This includes annual testing costs of \$3.7 million, annual reporting costs of around \$113,000, annual costs to the Federal government of \$1.3 million, and annual costs of \$4.2 million to improve tires. In the first year, NHTSA anticipates one-time costs of \$34.8 million, including the same costs noted above except changes in initial testing costs of \$33.1 million, no one-time costs to improve tires (NHTSA only assumes this as a subsequent annual cost, not an initial cost), and reporting start-up costs of almost \$400,000. For a further explanation of the estimated costs, see the FRIA provided in the docket for this proposal.

B National Environmental Policy Act

We have reviewed this rule for the purposes of the National Environmental Policy Act and determined that it would not have a significant impact on the quality of the human environment.

C. Regulatory Flexibility Act

Pursuant to the Regulatory Flexibility Act (5 U.S.C. § 601 *et seq.*, as amended by the Small Business Regulatory Enforcement Fairness Act (SBREFA) of 1996), whenever an agency

is required to publish a notice of rulemaking for any proposed or final rule, it must prepare and make available for public comment a regulatory flexibility analysis that describes the effect of the rule on small entities (*i.e.*, small businesses, small organizations, and small governmental jurisdictions). The Small Business Administration's regulations at 13 CFR part 121 define a small business, in part, as a business entity "which operates primarily within the United States." 13 CFR 121.105(a). No regulatory flexibility analysis is required if the head of an agency certifies the rule will not have a significant economic impact on a substantial number of small entities.

In compliance with the Regulatory Flexibility Act NHTSA has evaluated the effects of this final rule on small entities. The head of the agency has certified that this final rule would not have a significant economic impact on a substantial number of small entities. The following is NHTSA's statement providing the factual basis for the certification (5 U.S.C. § 605(b)). Tire manufacturers are not small entities. Out of the 60,000 entities that sell tires, there are a substantial number of tire dealers/retailers that are small entities. Since this final rule does not finalize any requirements pertaining to tire retailers, this final rule would not have a significant economic impact on a substantial number of small entities.

D. Executive Order 13132 (Federalism)

NHTSA has examined today's final rule pursuant to Executive Order 13132 (64 FR 43255, August 10, 1999). Executive Order 13132 requires agencies to determine the federalism implications of a proposed rule.

As noted in section II.C.7 above, Section 111 of EISA contains both an express preemption provision and a savings provision that address the relationship of the national tire

fuel efficiency consumer information program to be established under that section with State and local tire fuel efficiency consumer information programs. Section 111 provides:

Nothing in this section prohibits a State or political subdivision thereof from enforcing a law or regulation on tire fuel efficiency consumer information that was in effect on January 1, 2006. After a requirement promulgated under this section is in effect, a State or political subdivision thereof may adopt or enforce a law or regulation on tire fuel efficiency consumer information enacted or promulgated after January 1, 2006, if the requirements of that law or regulation are identical to the requirement promulgated under this section. Nothing in this section shall be construed to preempt a State or political subdivision thereof from regulating the fuel efficiency of tires (including establishing testing methods for determining compliance with such standards) not otherwise preempted under this chapter.³³⁹

In the NPRM, NHTSA sought public comment on the scope of Section 111 generally, and in particular on whether, and to what extent, Section 111 would or would not preempt tire fuel consumer information regulations that the administrative agencies of the State of California may promulgate in the future pursuant to California's Assembly Bill 844 (AB 844).³⁴⁰ Given the ambiguity of the statutory language regarding preemption, the agency sent a copy of the NPRM directly to the State of California, the National Governor's Association, the National Conference of State Legislatures, the Council of State Governments, and the National Association of Attorneys General. Of these organizations, only the California Energy Commission submitted comments on the NPRM. A summary of all comments the agency received on this issue is presented here.

Tire Rack commented that it believes NHTSA's proposed tire fuel efficiency consumer information program and the California's AB 844 are complementary regulations as currently proposed and can coexist.³⁴¹ Tire Rack stated that the NHTSA regulations will provide

³³⁹ 49 U.S.C. § 32304A(e).

³⁴⁰ Cal. Pub Res. Code §§ 25770-25773; 2003 Cal. Legis. Serv. Ch. 645 (A.B. 844) (West). This California legislation mandated that the California Energy Commission (CEC) develop and implement both a tire efficiency program and a corresponding consumer information program, and was passed on October 1, 2003.

³⁴¹ Tire Rack Comments, Docket No. NHTSA-2008-0121-0026.1 at 2.

consumers with the ability to compare and contrast a tire's influence on vehicle fuel consumption in great detail (as well as information on safety and durability), where the State of California bill identifies tires that offer the lowest rolling resistance in their size, as well as assures meaningful data will be available to tire dealers and consumers. Tire Rack also pointed out that both proposed regulations specify ratings based on the same tire characteristic (RRF) and test procedure (ISO 28580). Additionally, Tire Rack noted that California's AB 844 includes LT-sized tires fitted to many Jeeps, pickup trucks and sport utility vehicles used for personal transportation in the State of California.

The California Energy Commission (CEC) commented that a review of general preemption principles and the legislative history of the preemption provision in EISA section 111 provide ample evidence that California is not preempted from implementing a tire fuel efficiency consumer information program.³⁴² CEC commented that California did have a law on tire fuel efficiency consumer information in effect on January 1, 2006. That law directs the Commission to develop a replacement tire efficiency program. Thus, CEC commented that the plain meaning of the express preemption clause is that California may develop and implement such a program without running afoul of federal law. Further, CEC commented that California is the only state that had adopted a tire efficiency consumer information law by January 1, 2006. Thus, CEC stated that in order to give any practical effect to the savings clause, Congress must have intended California's program to be exempt from the preemption that was imposed on the other states. Additionally, CEC pointed to a House Committee on Energy and Commerce Report on the language which stated that "[t]his language would exempt from preemption the 2003 California law that requires the California Energy Commission to develop a comprehensive tire

³⁴² CEC Comments, Docket No. NHTSA-2008-0121-0033 at 2-4.

energy efficiency program.”³⁴³ CEC recognized that this House Report was prepared in response to language that was not enacted,³⁴⁴ but commented that because the language the non-enacted bill contained is identical to that which was ultimately adopted in EISA one year later, the House Report is compelling evidence that Congress intended the savings clause to apply to California. Thus, CEC requested that NHTSA conclude that the savings clause in 49 U.S.C, § 32304A allows California to implement its statutory mandate to develop a replacement tire efficiency program.

In contrast, RMA commented that EISA, in combination with other Federal law, preempts California from promulgating tire fuel efficiency information regulations under AB 844.³⁴⁵ RMA commented that CEC’s Staff Draft Proposal, which made public CEC’s proposed regulations under AB 844, conflicts with NHTSA’s NPRM, and would undermine the federal program and lead to fewer environmental benefits derived from either program. RMA commented that California’s AB 844 and NHTSA have the same goals relating to environmental policy and consumer education with regard to fuel economy, but use different means. RMA stated that compliance with both NHTSA’s and California’s proposed regulations is impractical, if not impossible and that NHTSA’s regulations should, therefore, preempt California’s regulations. RMA stated that because NHTSA proposed a graded rating system while California is proposing a binary ratings system,³⁴⁶ NHTSA’s and California’s differing proposals would create two rating systems on tires sold in California with separate labels displaying ratings on different scales. RMA commented that two dissimilar ratings will only serve to confuse rather

³⁴³ H.R. Rep. No. 109-537, 2d Sess., p. 6 (2006).

³⁴⁴ See H.R. 5632, 109th Cong., 2d Sess. (2006).

³⁴⁵ RMA Comments, Docket No. NHTSA-2008-0121-0036.1 at 15; RMA Comments Appendix 3, Docket No. NHTSA-2008-0121-0036.4 at 19-40.

³⁴⁶ California is proposing to designate all tires with rolling resistance values within 15 percent of tires with the lowest rolling resistance as fuel efficient. RMA noted that this, in effect, creates a two rating system – fuel efficient tires and all other tires.

than educate consumers. Further, RMA commented that the California rule must be preempted because it would interfere with NHTSA's sole authority to regulate tire safety. Finally, RMA commented that by attempting to regulate fuel efficiency through tire labels, California's standards practically impose a fuel efficiency standard and impermissibly intrude in a field already occupied by the Federal government. For these and other reasons detailed in RMA's comments, RMA urged NHTSA to determine that the proposed rules preempt California State regulation under AB 844, other than regulations that are identical to the federal regulations.

Given that California has not promulgated final regulations yet, NHTSA believes that it is premature to consider the applicability of the EISA section 111 preemption provision. Moreover, NHTSA notes that it is ultimately a court, not NHTSA, which would determine whether or not future regulations established by the State of California are preempted under Federal law.

E. Executive Order 12988 (Civil Justice Reform)

Pursuant to Executive Order 12988, "Civil Justice Reform,"³⁴⁷ NHTSA has considered whether this rulemaking would have any retroactive effect. This proposed rule does not have any retroactive effect.

F. Unfunded Mandates Reform Act

Section 202 of the Unfunded Mandates Reform Act of 1995 (UMRA) requires Federal agencies to prepare a written assessment of the costs, benefits, and other effects of a proposed or final rule that includes a Federal mandate likely to result in the expenditure by State, local, or tribal governments, in the aggregate, or by the private sector, of more than \$100 million in any one year (adjusted for inflation with base year of 1995). Adjusting this amount by the implicit gross domestic product price deflator for 2008 results in \$133 million ($108.483/81.536 = 1.33$).

³⁴⁷ 61 FR 4729 (Feb. 7, 1996).

Before promulgating a rule for which a written statement is needed, section 205 of the UMRA generally requires NHTSA to identify and consider a reasonable number of regulatory alternatives and adopt the least costly, most cost-effective, or least burdensome alternative that achieves the objectives of the rule. The provisions of section 205 do not apply when they are inconsistent with applicable law. Moreover, section 205 allows NHTSA to adopt an alternative other than the least costly, most cost-effective, or least burdensome alternative if the agency publishes with the final rule an explanation why that alternative was not adopted.

This final rule will not result in the expenditure by State, local, or tribal governments, in the aggregate, of more than \$133 million annually, and will not result in the expenditure of that magnitude by tire manufacturers and/or tire retailers.

G. Paperwork Reduction Act

Under the procedures established by the Paperwork Reduction Act of 1995 (PRA), a person is not required to respond to a collection of information by a Federal agency unless the collection displays a valid OMB control number. The final rule establishes a new consumer information program at 49 CFR Part 575.106, Tire fuel efficiency consumer information program. Tire manufacturers would provide data to NHTSA under a reporting requirement. For this new regulation, NHTSA is submitting to OMB a request for approval of the following collection of information.

In compliance with the PRA, this notice announces that the Information Collection Request (ICR) abstracted below has been forwarded to OMB for review and comment. The ICR describes the nature of the information collections and their expected burden. This is a request for an amendment of an existing collection.

Agency: National Highway Traffic Safety Administration (NHTSA).

Title: 49 CFR Part 575.106, Tire fuel efficiency consumer information program.

Type of Request: New collection.

OMB Clearance Number: Not assigned.

Form Number: The collection of this information will not use any standard forms.

Requested Expiration Date of Approval: Three years from the date of approval.

Summary of the Collection of Information

NHTSA is adding a new requirement in Part 575 which would require tire manufacturers and tire brand name owners to rate all replacement passenger car tires for fuel efficiency (i.e., rolling resistance), safety (i.e., wet traction), and durability (i.e., treadwear), and submit reports to NHTSA regarding the ratings. The ratings for safety and durability are based on test procedures specified under the UTQGS traction and treadwear ratings requirements. This information would be used by consumers of replacement passenger car tires to compare tire fuel efficiency across different tires and examine any tradeoffs between fuel efficiency (i.e., rolling resistance), safety (i.e., wet traction), and durability (i.e., treadwear) in making their purchase decisions.

Description of the Need for the Information and Use of the Information

NHTSA needs the information to provide consumers information to allow them to compare tire fuel efficiency across different tires and examine any tradeoffs between fuel efficiency (i.e., rolling resistance), safety (i.e., wet traction), and durability (i.e., treadwear) in making their purchase decisions.

Description of the Likely Respondents (Including Estimated Number, and Proposed Frequency of Response to the Collection of Information)

There are approximately 28 manufacturers of replacement tires sold in the United States who would be required to report annually.

Estimate of the Total Annual Reporting and Recordkeeping Burden Resulting from the Collection of Information

NHTSA estimates that there are 28 tire manufacturers that will be required to report. Each of these will need to set up the software in a computer program to combine the testing information, organize it for NHTSA's use, etc. We estimate this cost to be a one-time charge of about \$10,000 per company. Based on the costs used in the Early Warning Reporting Regulation analysis,³⁴⁸ we estimate the annual cost per report per tire manufacturer to be \$287. There are also computer maintenance costs of keeping the data up to date, etc. as tests come in throughout the year. In the EWR analysis, we estimated costs of \$3,755 per year per company. Thus, the total annual cost is estimated to be \$4,042 per company. Thus the total costs would be \$280,000 + \$113,176 = \$393,176 for the first year and \$113,176 as an annual cost for the 28 tire manufacturers.

The largest portion of the cost burden imposed by the tire fuel efficiency program arises from the testing necessary to determine the ratings that should be assigned to the tires. As detailed in of the FRIA, our revised per-SKU costs to test for rolling resistance, traction, and treadwear amount to \$1,180 (i.e. \$180 + \$500 + \$500). This would result in testing costs of \$22,420,000 in the first year (19,000 SKUs) and \$3,801,960 in subsequent years (3,222 new SKUs annually).

³⁴⁸ Preliminary Regulatory Evaluation, Tread Act Amendments to Early Warning Reporting Regulation Part 579 and Defect and Noncompliance Part 573, August 2008 (Docket No. 2008-0169-0007.1).

The estimated annual cost to the Federal government is \$1.28 million. This cost includes \$730,000 for enforcement testing, and about \$550,000 annually to set up and keep up to date a website that includes the information reported to NHTSA.

Comments are invited on:

- Whether the collection of information is necessary for the proper performance of the functions of the Department, including whether the information will have practical utility.
- Whether the Department's estimate for the burden of the information collection is accurate.
- Ways to minimize the burden of the collection of information on respondents, including the use of automated collection techniques or other forms of information technology.

A comment to OMB is most effective if OMB receives it within 30 days of publication.

Send comments to the Office of Information and Regulatory Affairs, Office of Management and Budget, 725 17th Street, NW, Washington, DC 20503, Attn: NHTSA Desk Officer. PRA comments are due within 30 days following publication of this document in the **FEDERAL REGISTER**.

The agency recognizes that the amendment to the existing collection of information contained in today's final rule may be subject to revision in response to public comments and the OMB review.

H. Executive Order 13045

Executive Order 13045³⁴⁹ applies to any rule that: (1) is determined to be economically significant as defined under E.O. 12866, and (2) concerns an environmental, health or safety risk that NHTSA has reason to believe may have a disproportionate effect on children. If the

³⁴⁹ 62 FR 19885 (Apr. 23, 1997).

regulatory action meets both criteria, we must evaluate the environmental health or safety effects of the proposed rule on children, and explain why the proposed regulation is preferable to other potentially effective and reasonably feasible alternatives considered by us.

This rule does not pose such a risk for children. The primary effects of this rule are to conserve energy by educating consumers to make better informed tire purchasing decisions.

I. National Technology Transfer and Advancement Act

Section 12(d) of the National Technology Transfer and Advancement Act (NTTAA) requires NHTSA to evaluate and use existing voluntary consensus standards in its regulatory activities unless doing so would be inconsistent with applicable law (*e.g.*, the statutory provisions regarding NHTSA's vehicle safety authority) or otherwise impractical.

Voluntary consensus standards are technical standards developed or adopted by voluntary consensus standards bodies. Technical standards are defined by the NTTAA as "performance-based or design-specific technical specification and related management systems practices." They pertain to "products and processes, such as size, strength, or technical performance of a product, process or material."

Examples of organizations generally regarded as voluntary consensus standards bodies include the American Society for Testing and Materials (ASTM), the Society of Automotive Engineers (SAE), and the American National Standards Institute (ANSI). If NHTSA does not use available and potentially applicable voluntary consensus standards, we are required by the Act to provide Congress, through OMB, an explanation of the reasons for not using such standards.

The rule establishes test procedures for a national tire fuel efficiency rating system for replacement passenger car tires to assist consumers in making more educated tire purchasing

decisions. For purposes of the fuel efficiency rating determination, NHTSA will base the rating determination on a rolling resistance test method ISO 28580:2009(E), Tyre Rolling Resistance measurement method – Single point test and measurement result correlation – Designed to facilitate international cooperation and, possibly, regulation building. The ISO is a worldwide federation of national standards bodies that prepares standards through technical committees comprised of international organizations, governmental and non-governmental, in liaison with ISO.³⁵⁰ Standards developed by ISO are voluntary consensus standards.

J. Executive Order 13211

Executive Order 13211³⁵¹ applies to any rule that: (1) is determined to be economically significant as defined under E.O. 12866, and is likely to have a significant adverse effect on the supply, distribution, or use of energy; or (2) that is designated by the Administrator of the Office of Information and Regulatory Affairs as a significant energy action. If the regulatory action meets either criterion, we must evaluate the adverse energy effects of the proposed rule and explain why the proposed regulation is preferable to other potentially effective and reasonably feasible alternatives considered by NHTSA.

The rule establishes test procedures for a national tire fuel efficiency rating program for the purpose of educating consumers about the effect of tires on fuel efficiency, safety and durability, which if successful, will likely reduce the rolling resistance of replacement passenger car tires and, thus, reduce the consumption of petroleum. Therefore, this final rule will not have any adverse energy effects. Accordingly, this rulemaking action is not designated as a significant energy action.

K. Regulation Identifier Number (RIN)

³⁵⁰ ISO Central Secretariat, 1, ch. de la Voie-Creuse, Case postale 56, CH-1211 Geneva 20, Switzerland, Telephone +41 22 749 01 11, Fax +41 22 733 34 30, www.iso.org.

³⁵¹ 66 FR 28355 (May 18, 2001).

The Department of Transportation assigns a regulation identifier number (RIN) to each regulatory action listed in the Unified Agenda of Federal Regulations. The Regulatory Information Service Center publishes the Unified Agenda in April and October of each year. You may use the RIN contained in the heading at the beginning of this document to find this action in the Unified Agenda.

L. Plain Language

Executive Order 12866 requires each agency to write all rules in plain language. Comments from RMA indicated that it was confused about what was being proposed in certain respects due to preamble typos and alleged inconsistencies between the preamble and the proposed regulatory text. NHTSA has clarified the proposals in this preamble and has eliminated any inconsistencies between the preamble and the final regulatory text. NHTSA has attempted to use plain language in promulgating this final rule.

M. Privacy Act

Anyone is able to search the electronic form of all comments received into any of our dockets by the name of the individual submitting the comment (or signing the comment, if submitted on behalf of an organization, business, labor union, etc.). You may review DOT's complete Privacy Act statement in the Federal Register published on April 11, 2000 (Volume 65, Number 70; Pages 19477-78) or you may visit <http://www.dot.gov/privacy.html>.

List of Subjects in 49 CFR Part 575

Consumer protection, Incorporation by reference, Motor vehicle safety, Reporting and recordkeeping requirements, Tires.

In consideration of the foregoing, NHTSA is amending 49 CFR Part 575 as follows:

1. Revise the authority citation of Part 575 to read as follows:

PART 575 – CONSUMER INFORMATION

Authority: 49 U.S.C. 32302, 32304A, 30111, 30115, 30117, 30123, 30166, and 30168, Pub. L. 104-414, 114 Stat. 1800, Pub. L. 109-59, 119 Stat. 1144, Pub. L. 110-140, 121 Stat. 1492, 15 U.S.C. 1232(g); delegation of authority at 49 CFR 1.50.

2. Revise § 575.1 to read as follows:

Subpart A – General

§ 575.1 Scope.

This part contains National Highway Traffic Safety Administration regulations relating to consumer information.

3. Revise § 575.2 (a) and (c) to read as follows:

§ 575.2 Definitions.

(a) Statutory definitions. -- (1) All terms used in this part, subject to paragraph (a)(2) of this section, that are defined in 49 U.S.C. 30102, are used as defined therein.

(2) All terms used in Subpart D of this part that are defined in 15 U.S.C. 1231, are used as defined therein.

* * * * *

(c) Definitions used in this part.

Owners manual means the document which contains the manufacturers comprehensive vehicle operating and maintenance instructions, and which is intended to remain with the vehicle for the life of the vehicle.

Skid number means the frictional resistance measured in accordance with ASTM E 274 (incorporated by reference, see § 575.3) at 40 miles per hour, omitting water delivery as specified in paragraph 7.1 of ASTM E 274 (incorporated by reference, see § 575.3).

4. Revise § 575.3 to read as follows:

§ 575.3 Matter incorporated by reference.

(a) Certain material is incorporated by reference into this part with the approval of the Director of the Federal Register under 5 U.S.C. 552(a) and 1 CFR part 51. To enforce any edition other than that specified in this section, the National Highway Traffic Safety Administration (NHTSA) must publish notice of change in the Federal Register and the material must be available to the public. All approved material is available for inspection at the NHTSA Technical Information Services Reading Room (<http://www.nhtsa.dot.gov/cars/problems/trd/>), 1200 New Jersey Avenue SE, Washington, DC 20590 (888-327-4236), and at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: <http://www.archives.gov/federal-register/cfr/ibr-locations.html>. All approved material is also available from the sources listed below. If you experience difficulty obtaining the standards referenced below, contact NHTSA's Office of Rulemaking, 1200 New Jersey Avenue SE, Washington, DC 20590, phone number: (202) 366-0846.

(b) *International Organization for Standardization (ISO)*, 1, ch. de la Voie-Creuse, CP 56, CH-1211 Geneva 20, Switzerland, +41 22 749 01 11, <http://www.iso.org/iso/home.htm>. All

ISO materials are also available from the U.S. ISO member, *American National Standards Institute (ANSI)*, 25 West 43rd Street, Fourth Floor, New York, NY 10036-7417, 212-642-4900, <http://www.ansi.org/>.

(1) International Organization for Standardization (ISO), ISO 28580:2009(E) (“ISO 28580”), “Passenger car, truck and bus tyres – Methods of measuring rolling resistance – Single point test and correlation of measurement results,” First edition (July 1, 2009), IBR approved for § 575.106.

(2) [Reserved]

(c) *American Society for Testing and Materials (ASTM)*, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428-2959, 610-832-9500, <http://www.astm.org/>.

(1) ASTM E 1136-93 (Reapproved 2003) (“ASTM E 1136”), “Standard Specification for a Radial Standard Reference Test Tire” (July 1993), IBR approved for § 575.104.

(2) ASTM E 1337-90 (Reapproved 2002) (“ASTM E 1337”), “Standard Test Method for Determining Longitudinal Peak Braking Coefficient of Paved Surfaces Using a Standard Reference Test Tire” (April 1990), IBR approved for § 575.106.

(d) The following standards are not available from the original publisher or a standards reseller. As indicated in paragraph (a) of this section, the standards are available for inspection at the NHTSA Technical Information Services Reading Room (<http://www.nhtsa.dot.gov/cars/problems/trd/>), 1200 New Jersey Avenue SE, Washington, DC 20590 (888-327-4236), and at NARA. For information on the availability of this material at NARA, call 202-741-6030, or go to: <http://www.archives.gov/federal-register/cfr/ibr-locations.html>. If you experience difficulty obtaining the standards referenced below, contact

NHTSA’s Office of Rulemaking, 1200 New Jersey Avenue SE, Washington, DC 20590, phone number (202) 366-0846.

(1) ASTM E 274-79 (“ASTM E 274”), “Standard Test Method for Skid Resistance of Paved Surfaces Using a Full-Scale Tire” (February 1980), IBR approved for § 575.104.

(2) ASTM F 377-74 (“ASTM F 377”), “Standard Method for Calibration of Braking Force for Testing of Pneumatic Tires” (March 1974), IBR approved for § 575.104.

5. Amend § 575.104 by revising paragraphs (e)(2)(ix)(C), (f)(1)(ii), (f)(1)(iii), (f)(1)(iv), (f)(1)(v), and (f)(1)(vii), to read as follows:

§ 575.104 Uniform tire quality grading standards.

* * * * *

(e) * * *

(2) * * *

(ix) * * *

(C) Determine the course severity adjustment factor by dividing the base course wear rate for the course monitoring tires (see Note to this paragraph) by the average wear rate for the four course monitoring tires.

Note to paragraph (e)(2)(ix)(C): The base wear rate for the course monitoring tires will be obtained by the government by running the tire specified in ASTM E 1136 (incorporated by reference, see § 575.3) course monitoring tires for 6,400 miles over the San Angelo, Texas, UTQGS test route 4 times per year, then using the average wear rate from the last 4 quarterly CMT tests for the base course wear rate calculation. Each new base course wear rate will be published in the Federal Register. The course monitoring tires used in a test convoy must be no

more than one year old at the commencement of the test and must be used within two months after removal from storage.

* * * * *

(f) * * *

(1) * * *

(i) * * *

(ii) The standard tire is the tire specified in ASTM E 501 (incorporated by reference, see § 575.3).

(iii) The pavement surface is wetted in accordance with paragraph 4.7, “Pavement Wetting System,” of ASTM E 274 (incorporated by reference, see § 575.3).

(iv) The test apparatus is a test trailer built in conformity with the specifications in paragraph 4, “Apparatus,” of ASTM E 274 (incorporated by reference, see § 575.3). The test apparatus is instrumented in accordance with paragraph 4.5 of that method, except that the “wheel load” in paragraph 4.3 and tire and rim specifications in paragraph 4.4 of that method are as specified in the procedures in paragraph (f)(2) of this section for standard and candidate tires.

(v) The test apparatus is calibrated in accordance with ASTM F 377 (incorporated by reference, see § 575.3), with the trailer’s tires inflated to 24 psi and loaded to 1,085 pounds.

* * * * *

(vii) A standard tire is discarded in accordance with ASTM E 501 (incorporated by reference, see § 575.3).

* * * * *

6. Add § 575.106 to subpart B to read as follows:

§ 575.106 Tire fuel efficiency consumer information program.

(a) Scope. This section requires tire manufacturers, tire brand name owners, and tire retailers to provide information indicating the relative performance of replacement passenger car tires in the areas of fuel efficiency, safety, and durability.

(b) Purpose. The purpose of this section is to aid consumers in making better educated choices in the purchase of passenger car tires.

(c) Application. This section applies to replacement passenger car tires. However, this section does not apply to light truck tires, deep tread, winter-type snow tires, space-saver or temporary use spare tires, tires with nominal rim diameters of 12 inches or less, or to limited production tires as defined in § 575.104(c)(2). Tire manufacturers may comply with the requirements in this § 575.106 as an alternative to complying with the requirements in § 575.104(d)(1)(i)(A) and (B).

(d) Definitions. – (1) All terms used in this section that are defined in Section 32101 of Title 49, United States Code, are used as defined therein.

(2) As used in this section:

Brand name owner means a person, other than a tire manufacturer, who owns or has the right to control the brand name of a tire or a person who licenses another to purchase tires from a tire manufacturer bearing the licensor's brand name.

CT means a pneumatic tire with an inverted flange tire and rim system in which the rim is designed with rim flanges pointed radially inward and the tire is designed to fit on the underside of the rim in a manner that encloses the rim flanges inside the air cavity of the tire.

Dealer means a person selling and distributing new motor vehicles or motor vehicle equipment primarily to purchasers that in good faith purchase the vehicle or equipment other than for resale.

Distributor means a person primarily selling and distributing motor vehicles or motor vehicle equipment for resale.

Lab alignment tires or LATs means the reference tires which the reference lab will test to be used to align other rolling resistance machines with the reference lab in accordance with the machine alignment procedure in ISO 28580 (incorporated by reference, see § 575.3), section 10.

Light truck (LT) tire mean a tire designated by its manufacturer as primarily intended for use on lightweight trucks or multipurpose passenger vehicles.

Passenger car tire means a tire intended for use on passenger cars, multipurpose passenger vehicles, and trucks, that have a gross vehicle weight rating (GVWR) of 10,000 pounds or less.

Reference lab means the laboratory or laboratories that the National Highway Traffic Safety Administration designates and which maintains and operates a rolling resistance test machine to test LATs for rolling resistance so that other testing laboratories may correlate the results from its rolling resistance test machine in accordance with the machine alignment procedure in ISO 28580 (incorporated by reference, see § 575.3), section 10.

Replacement passenger car tire means any passenger car tire other than a passenger car tire sold as original equipment on a new vehicle.

Size designation means the alpha-numeric designation assigned by a manufacturer that identifies a tire's size. This can include identifications of tire class, nominal width, aspect ratio, tire construction, and wheel diameter.

Stock keeping unit or SKU means the alpha-numeric designation assigned by a manufacturer to uniquely identify a tire product. This term is sometimes referred to as a product code, a product identifier, or a part number.

Tire line or tire model means the entire name used by a tire manufacturer to designate a tire product, including all prefixes and suffixes as they appear on the sidewall of a tire.

Tire retailer means a dealer or distributor of new replacement passenger car tires sold for use on passenger cars, multipurpose passenger vehicles, and trucks, that have a gross vehicle weight rating (GVWR) of 10,000 pounds or less.

(e) Requirements. -- (1) Information. (i) Requirements for tire manufacturers.

Subject to paragraph (e)(1)(iii) of this section, each manufacturer of tires, or in the case of tires marketed under a brand name, each brand name owner, shall provide rating information for each tire of which it is the manufacturer or brand name owner in the manner set forth in paragraphs (e)(1)(i)(A) through (C) of this section. The ratings for each tire shall be only those specified in paragraph (e)(2) of this section. For the purposes of this section, each tire of a different SKU is to be rated separately. Each tire shall be able to achieve the level of performance represented by each rating.

(A) Ratings. Each tire shall be rated with the words, letters, symbols, and figures specified in paragraph (e)(2) of this section.

(B) Tire label. [Reserved.]

(C) Reporting requirements. The information collection requirements contained in this section have been approved by the Office of Management and Budget under the provisions of the Paperwork Reduction Act (44 U.S.C. 3501 et seq.) and have been assigned OMB Control Number XXXX-XXXX.

(1) Subject to paragraph (e)(1)(iii) of this section, manufacturers of tires or, in the case of tires marketed under a brand name, brand name owners of tires subject to this section

shall submit to NHTSA electronically, either directly or through an agent, the following data for each rated replacement passenger car tire:

- (i) Rolling resistance rating, as determined in paragraph (e)(2)(i) of this section.
- (ii) Wet traction rating, as determined in paragraph (e)(2)(ii) of this section.
- (iii) Treadwear rating, as determined in paragraph (e)(2)(iii) of this section.
- (2) Format of data submitted. The information required under paragraph

(e)(1)(i)(C)(1) of this section shall be submitted to NHTSA as extra columns in the electronic data submission required under section 26 of Part 579.

(3) Exempted tires. Manufacturers of tires or, in the case of tires marketed under a brand name, brand name owners of tires subject to this section shall submit to NHTSA all tire lines, size designations, and stock keeping units it manufactures which are exempted from this section (§ 575.106) as determined under paragraph (c) of this section. Where a manufacturer is required to report ratings under this section, the information required in this paragraph may be submitted with the ratings information reported in accordance with paragraph (e)(1)(i)(C)(1) of this section. Where a manufacturer of tires, or in the case of tires marketed under a brand name, brand name owners of tires only manufactures tires that are exempt from this section under paragraph (c) of this section, that manufacturer shall submit a one-time statement listing the tire lines, size designations, and stock keeping units it manufactures, and certifying that none of the tires it manufactures are required to be rated under this section.

(4) New ratings information. Whenever the tire manufacturer, or in the case of tires marketed under a brand name, the brand name owner receives information that would determine new or different information required under paragraph (e)(1)(i)(C)(1) of this section for a tire, the tire manufacturer or brand name owner shall submit the new ratings information to NHTSA

on or before the date 30 calendar days after receipt by the manufacturer or brand name owner of the new information, whichever comes first.

(5) Voluntary submission of data. Manufacturers of tires or, in the case of tires marketed under a brand name, brand name owners of tires not subject to this section may submit to NHTSA data meeting the requirements of (1) and (2) of this section for any tire they wish to have included in the database of information available to consumers on NHTSA's website.

(ii) Requirements for tire retailers. Subject to paragraph (e)(1)(iii) of this section, each tire retailer shall provide rating information for each passenger car tire offered for sale in the manner set forth in this section.

(iii) Date for compliance. The requirements of paragraphs (e)(1)(i) and (e)(1)(ii) of this section will be implemented as indicated in a forthcoming final rule. These dates will be announced in the Federal Register.

(2) Performance. -- (i) Fuel efficiency. [Reserved.]

(ii) Traction. [Reserved.]

(iii) Treadwear. [Reserved.]

(f) Fuel efficiency rating conditions and procedures. -- (1) Conditions. (i) Measurement of rolling resistance force under the test procedure specified in paragraph (f)(2) of this section shall be made using either the force or the torque method.

(ii) The test procedure specified in paragraph (f)(2) of this section shall be carried out on an 80-grit roadwheel surface.

(iii) The machine alignment procedure specified in section 10 of the test procedure specified in paragraph (f)(2) of this section shall be conducted using pairs of the LATs specified in paragraph (f)(1)(iv) of this section, and tested by the reference lab.

(iv) Lab alignment tires. The LATs to be used in the machine alignment procedure in section 10 of the test procedure specified in paragraph (f)(2) of this section will be specified in this section in a forthcoming final rule.

(v) Break-in procedure for bias ply tires. Before starting the rolling resistance testing under the test procedure specified in paragraph (f)(2) of this section on a bias ply replacement passenger car tire, the tire shall be broken in by running it for one (1) hour with the speed, loading, and inflation pressure as specified in paragraphs (f)(1)(v)(A), (f)(1)(v)(B), and (f)(1)(v)(C) of this section. After the one hour break-in, allow the tire to cool for two (2) hours and re-adjust to the required ISO 28580 (incorporated by reference, see § 575.3) test inflation pressure, and verify 10 minutes after the adjustment is made. After break-in, the bias ply tire should follow the 30 minute warm-up procedure of ISO 28580 (incorporated by reference, see § 575.3).

(A) Speed. The speed shall be 80 kilometer per hour (kph).

(B) Loading. The tire loading shall be 80 percent of the maximum tire load capacity.

(C) Inflation pressure. The inflation pressure shall be 210 kilopascals (kPa) for standard load tires, or 250 kPa for reinforced or extra load tires.

(2) Procedure. The test procedure shall be as specified in ISO 28580 (incorporated by reference, see § 575.3), except that the conditions specified in paragraph (f)(1) of this section shall be used.

(g) Traction rating conditions and procedures. (1) Conditions. Test conditions are as specified in § 575.104(f)(1), subject to the changes in paragraphs (g)(1)(i) through (g)(1)(iii) of this section to additionally measure the peak coefficient of friction.

(i) The sampling rate of the data acquisition is to be no less than 100 Hertz in accordance with Section 6.6.1.8 of ASTM E 1337 (incorporated by reference, see § 575.3).

(ii) The rate of brake application shall be sufficient to control the time interval between initial brake application and peak longitudinal force to be between 0.3 and 0.5 seconds, and shall be determined in accordance with Section 6.3.2 of ASTM E 1337 (incorporated by reference, see § 575.3).

(iii) The peak coefficient of friction (or peak braking coefficient) shall be determined in accordance with Section 12 of ASTM E 1337 (incorporated by reference, see § 575.3) for each dataset.

(iv) The slide coefficient of friction will be determined in accordance with § 575.104(f)(2)(iii).

(2) Procedure. (i) Prepare two standard tires as specified in § 575.104(f)(2)(i).

(ii) Mount the tires on the test apparatus described in § 575.104(f)(1)(iv) and load each tire to 1,085 pounds.

(iii) Tow the trailer on the asphalt test surface specified in § 575.104(f)(1)(i) at a speed of 40 mph, lock one trailer wheel, and record the slide and peak coefficient of friction on the tire associated with that wheel.

(iv) Repeat the test on the concrete surface, locking the same wheel.

(v) Repeat the tests specified in paragraphs (g)(2)(iii) and (iv) of this section for a total of 10 measurements on each test surface.

(vi) Repeat the procedures specified in paragraphs (g)(2)(iii) through (v) of this section, locking the wheel associated with the other standard tire.

(vii) Average the 20 measurements taken on the asphalt surface to find the standard tire average peak coefficient of friction for the asphalt surface. Average the 20 measurements taken on the concrete surface to find the standard tire average peak coefficient of friction for the concrete surface. The standard tire average peak coefficient of friction so determined may be used in the computation of adjusted peak coefficients of friction for more than one candidate tire.

(viii) Average the 20 measurements taken on the asphalt surface to find the standard tire average slide coefficient of friction for the asphalt surface. Average the 20 measurements taken on the concrete surface to find the standard tire average slide coefficient of friction for the concrete surface. The standard tire average slide coefficient of friction so determined may be used in the computation of adjusted slide coefficients of friction for more than one candidate tire.

(ix) Prepare two candidate tires of the same SKU in accordance with paragraph (g)(2)(i) of this section, mount them on the test apparatus, and test one of them according to the procedures of paragraphs (g)(2)(ii) through (v) of this section, except load each tire to 85 percent of the test load specified in § 575.104(h). For CT tires, the test inflation of candidate tires shall be 230 kPa. Candidate tire measurements may be taken either before or after the standard tire measurements used to compute the standard tire traction coefficient. Take all standard tire and candidate tire measurements used in computation of a candidate tire's adjusted peak coefficient and adjusted slide coefficient of friction within a single three hour period. Average the 10 measurements taken on the asphalt surface to find the candidate tire average peak coefficient and average slide coefficient of friction for the asphalt surface. Average the 10 measurements taken on the concrete surface to find the candidate tire average peak coefficient of friction for the concrete surface. Average the 10 measurements taken on the concrete surface to find the candidate tire average slide coefficient of friction for the concrete surface.

(x) Repeat the procedures specified in paragraph (g)(2)(viii) of this section, using the second candidate tire as the tire being tested.

(h) Treadwear rating conditions and procedures. -- (1) Conditions. Test conditions are as specified in § 575.104(e)(1).

(2) Procedure. Test procedure is as specified in § 575.104(e)(2).

Issued on:

David L. Strickland
Administrator

[Signature page for Final Rule for national tire fuel efficiency consumer information program]