

OPTION 1B

FUEL EFFICIENT REPLACEMENT TIRES

Background

This option evaluates possible reductions in fuel consumption through greater use of low-rolling resistance (LRR) replacement tires. Consumers are not aware that tires vary in fuel efficiency based on their rolling resistance characteristic and that the tires sold on new cars are usually more fuel efficient than replacement tires normally purchased. Optimization of fuel efficiency for replacement tire selection might be achieved through an education program regarding the energy efficiency performance of tires.

However, no definitive data exists regarding the quantitative potential for fuel savings using fuel efficient tires. At the same time, no definitive evidence exists that fuel economy of tires can be improved without significantly affecting a tire's safety. In March 2005, the California Energy Commission (Energy Commission) initiated a Fuel Efficient Tire Study (Tire Study) to generate verifiable tire test data that will demonstrate the potential of low rolling resistance tires to save fuel in real world conditions.

Status

Senate Bill 1170 (Sher), [Chapter 912, Statutes of 2001] directed the Energy Commission to make recommendations on a California State Fuel-Efficient Tire Program. The final report on this subject, *Recommendation for a California State Fuel-Efficient Tire Program*, found "Potential fuel savings from fuel-efficient tires is substantial"however...."Sufficient data is not available to draw conclusions regarding the performance and characteristics of fuel efficient tires."¹

There is substantial reason for uncertainty regarding the practicality of achieving significant fuel savings from low-rolling resistance tires. Tire manufacturers (represented through the Rubber Manufacturers Association) have long asserted that any improvement in fuel economy will come at a cost of either tire longevity, performance, a safety characteristic, or significantly greater initial expense. Tire manufacturers routinely use rolling resistance in the engineering and the design process for developing new tires. Because of this assertion and because the tire manufacturers have the only significant and extensive existing data regarding rolling resistance (and hence fuel economy), the Energy Commission can not presently predict with any accuracy what fuel savings, if any, the use of low-rolling resistance tires could practically achieve.

It is anticipated that the Tire Study will produce hard data that can be used to accurately predict in scenario form, the potential statewide fuel savings that a fuel efficient tire program could achieve. The Tire Study goals are to:

1. Select the most effective, Society of Automotive Engineers (SAE) recognized rolling resistance test for determining the relative fuel economy of light-duty vehicle tires (SAE J2452 or SAE J1269).
2. Identify the range of rolling resistance for replacement tires in light-duty vehicles.
3. Explore the relationship (if any) of low rolling resistance tires with tire performance, sidewall rating characteristics, tire life, cost, and safety aspects such as wet traction and stopping distance.
4. Determine the feasibility of imposing a minimum fuel economy standard for light-duty vehicle replacement tires

It is expected that significant data from the Tire Study will become available late in 2005 with the final report due in September 2006. The results of this study will also be used for the basis of rulemaking activities as mandated by Assembly Bill 844 (Nation), Chapter 645, Statutes of 2003.

Assembly Bill 844, commonly referred to as the Tire Bill, requires tire manufacturers to report to the Energy Commission the rolling resistance and relative fuel economy of replacement tires sold in California. With this information composed in a reportable format, consumers will for the first time, be able to select tires regarding fuel economy in addition to the existing parameters of use, cost, and longevity. The Energy Commission will also be required to adopt (if feasible) minimum fuel efficiency standards for replacement tires resulting in a fuel economy equal to or better than for tires on new vehicles.

Even if what the tire manufacturers claim to be true is confirmed in the Tire Study, there still may be the potential for significant fuel savings in the Energy Commission's Fuel Efficient Tire Program. Consumers often purchase tires with excess performance capacities such as speed ratings over 130 miles per hour or wet traction ratings where it seldom rains (such as Southern California deserts) or all season capacity where it seldom snows (Southern California). The knowledge that these extra and often un-needed performance characteristics may have a fuel penalty in addition to extra cost may sway the rationale of consumers to purchase tires with performance characteristics that are not necessary for the safe operation of their vehicles. The Energy Commission's database of rolling resistance and relative fuel economy for replacement tires can be used to guide consumers in making a more informed decision in purchasing replacement tires that can perform safely while still offering fuel savings.

Endnotes

¹California Energy Commission, *California State Fuel-Efficient Tire Program: Volume 1 – Summary of Findings and Recommendations*, January 31, 2003, CEC 600-03-001F-VOL1.