TLU-15 Low Rolling Resistance Tires [Lewison]

Policy Description:

Improve the fuel economy of the light duty vehicle (LDV) fleet by setting minimum energy efficiency standards for replacement tires and requiring that greater information about Low-Rolling Resistance (LRR) replacement tires be made available to consumers at the point of sale.

Policy Design:

- **Goal levels:** Require that replacement tires be LRR tires achieving an average 3% gain in fuel economy.
- **Timing:** The requirement would begin in 2008.
- **Parties:** Industry**,** [dot, nmed]

Implementation Method:

Manufacturers currently use LRR tires on new vehicles, but they are not easily available to consumers as replacement tires. When installing original equipment tires, carmakers use low rolling resistance tires as a way to contribute to meeting the federal automobile fuel economy (CAFÉ) standards. When replacing the original tires, consumers often purchase less efficient tires. Currently, tire manufacturers and retailers are not required to provide information about the fuel efficiency of replacement tires. In addition, there is no current minimum standard for fuel efficiency that all replacement tires must meet. The rolling resistance of the various tires consumers can purchase have significant variations depending on tread design, composition, cross-section geometry, and inflation pressure.

The program would include consideration of the technical feasibility and cost of such a program, the relationship between tire fuel efficiency and tire safety, potential effects upon tire life, and impacts on the potential for tire recycling. In addition, the program would exempt certain classes of tires that sell in low volumes, including specialty and high performance tires.

An appropriate State agency would initiate a fuel efficient tire replacement program. The program could include consumer education, product labeling, and minimum standards elements. These programs would be developed under a rule development process that would incorporate the best scientific information, including the results from tests of tires conducted by the tire manufacturers, the California Energy Commission, and other data reviewed by the National Academy of Sciences.

The minimum standard is likely to be less stringent than the energy efficiency of original tires provided by the automobile manufacturers on new purchase vehicles. Such a regulation would improve the fuel efficiency of the overall LDV fleet, but not necessarily the fuel efficiency of all tires since consumers would still make choices in the marketplace. The replacement tires in the future would be on average more fuel efficient than those historically purchased, but are likely to be on average not as fuel efficient as the tires included as original equipment by the automobile manufacturers.

Related Policies/Programs in Place:

In October of 2003, California adopted the world's first fuel-efficient replacement tire law. AB 844 is a "first-of-its-kind" law requiring energy efficient tires. AB 844 directed the California Energy Commission (CEC) to develop a State Efficient Tire Program. Specifically, AB 844 requires the CEC to: (1) develop a consumer education program, (2) require that retailers provide labeling information to consumers at the point of sale, and (3) promulgate through a rule development process a minimum standard for the fuel efficiency of replacement tires sold. The California rule development process is scheduled to begin in January 2007.

Estimated GHG Savings and Costs Per MTCO2e:

	2010	2020	Units
GHG Emission Savings	N/a	0.3	MMtCO2e
Net Present Value (2006-2020)		-$218	$million
Cumulative Emissions Reductions (2007-2020)		3.5	MMtCO2e
Cost-Effectiveness		-$61.42	$/tCO2e

Data Sources, Methods and Assumptions:

- **Data Sources:** Studies by National Research Council, California Energy Commission, and Arizona PIRG
- **Quantification Methods:** CCS evaluated and compared a series of existing assessment, as follows:

At the request of the United States Congress, the National Research Council of the National Academy of Sciences (NRC/NAS) conducted a study of the feasibility of reducing rolling resistance in replacement tires. The 2006 NRC/NAS study made the following conclusions:

"Reducing the average rolling resistance of replacement tires by a magnitude of 10 percent is technically and economically feasible.

Tires and their rolling resistance characteristics can have a meaningful effect on vehicle fuel economy and consumption.

Although traction may be affected by modifying a tire's tread to reduce rolling resistance, the safety consequences are probably undetectable.

Reducing the average rolling resistance of replacement tires promises fuel savings to consumers that exceed associated tire purchase costs, as long as tire wears life is not shortened."

A 2003 study commissioned by the California Energy Commission found that about 300 million gallons of gasoline per year can be saved in that state with lower rolling resistance tires. A set of four low rolling resistance tires would cost consumers an estimated $5 to $12 more than conventional replacement tires. The efficient tires would reduce gasoline consumption by 1.5 to 4.5 percent, saving the typical driver $50 to $150 over the 50,000-mile life of the tires. Consumers would save more than $470 million annually at current retail prices or approximately $1.4 billion over the three-year lifetime of a typical set of replacement tires.

The New Mexico PIRG report, "A Blueprint for Action," presents estimates for potential carbon dioxide emission reductions from a low-rolling resistance replacement tire program. The AZ PIRG estimate for GHG reductions from a fuel efficient tire program is 0.25 MMTCO2e in 2020.

CCS estimated the reduction in GHG emission from this policy using the Draft New Mexico Greenhouse Gas Inventory and Reference Case as a baseline. Using an emission reduction factor of 2.4%, the resulting CCS estimate for emissions reductions from fuel efficient replacement tires is 0.3 MMtCO2e in 2020. The cumulative emissions reduction for 2008-2020 is 3.5 MMTCO2e.

The emissions reductions from LRR replacement tires are the result of gasoline conservation, creating a cost savings for consumers. The present value of the cumulative net benefits to society of an LRR replacement tire program through 2020 is -$61.42 per tCO2e. This cost effectiveness estimate is sensitive to the average price of fuel.

The estimate of costs associated with LRR replacement tires account for faster tire wear (assuming that tires have lower tread) and an increase in the cost of production that is passed through to consumers. According to the NRC/NAS study, consumers would pay an additional $12.00 per year to replace tires (including installation), and they would pay an additional $1.00 per tire due to increased production costs.

- **Key Assumptions:** The amount of greenhouse gas emissions reductions from this policy depends upon what the average fuel efficiency of replacement tires would be under such a policy and the rate at which consumers will replace their existing tires with more fuel-efficient tires.

Key Uncertainties:

The low rolling resistance fuel efficient tires program is based upon existing off-the-shelf technologies and products that already exist in the consumer marketplace. These tires are already available in the marketplace, and are comparable with the tires included as original equipment on new purchase light duty vehicles.

Ancillary Benefits and Costs:

Some reduction in criteria pollutants.

Feasibility Issues:

Some members of the group raised questions about potential safety and performance compared to conventional tires.

The 2006 National Academy of Sciences study of LRR replacement tires reported that "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 may occur from modifying the tread to reduce rolling resistance."

Status of Group Approval:

Pending

Level of Group Support:

TBD

Barriers to Consensus:

TBD