



Sustainable

TRANSPORTATION

U.S. DEPARTMENT OF
ENERGY | Energy Efficiency &
Renewable Energy

Legacy Fleet Improvements

2013 Annual Merit Review

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Outline

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Introduction

- Technical Objectives
 - Develop technologies capable of reducing fleet fuel consumption by at least 2%
- Technical Areas and Projects
 - Tire Technology
 - **Cooper Tire & Rubber Company:** Improving Vehicle Fuel Efficiency Through Tire Design, Materials, and Reduced Weight
 - **The Goodyear Tire & Rubber Company:** A System for Automatically Maintaining Pressure in a Commercial Truck Tire
 - **PPG Industries:** A Materials Approach to Fuel-Efficient Tires
 - Driver feedback
 - **Eaton:** Look-Ahead Driver Feedback and Powertrain Management
 - **University of California Riverside:** Next Generation Environmentally-Friendly Driving Feedback Systems Research and Development

Budget

Legacy Fleet Improvements

FY 2012 Enacted	FY 2013 Full Year CR	FY 2014 Request
\$3M *	\$3M **	\$3M ***

- * FY 2012 SBIR/STTR removed.
- ** FY 2013 full year CR with SBIR/STTR removed.
- ***FY 2014 budget request inclusive of SBIR/STTR.

FY 2014 Priorities:

- Complete current projects
- Issue a new funding opportunity announcement (FOA) to solicit proposals to continue legacy improvement efforts. Depending on the results of the ongoing projects, the new FOA may address technologies beyond tires and driver feedback.

FY 2012 Accomplishments

- All five projects made presentations at the 2012 AMR
- Specific accomplishments in FY2012
 - Cooper
 - Established activities in nano-fiber reinforcement, light weight bead bundle and belt package, barrier film liner, and low hysteresis tire profile
 - Goodyear
 - Developed design process and prototype manufacturing method, proved pumping theory, refined material requirements
 - PPG
 - Completed coating benchmark and identified coating design principles
 - Eaton
 - Selected target driving scenarios, completed look-ahead controller hardware design, developed functional requirement specifications
 - UC – Riverside
 - Completed eco-driving feedback design and algorithm updating module

FY 2013 Status

- Cooper
 - Tire prototypes have been built and tested
- Goodyear
 - Validated initial system by testing; selected a supplier
- PPG
 - Identified several compounds that meet rolling resistance performance requirements; developing barrier coating that exceeds bromobutyl rubber barrier performance
- Eaton
 - Demonstrated feasibility of the target fuel economy improvement through simulation; currently developing HMI
- UC - Riverside
 - Completed eco-routing, eco-driving feedback, eco-score and eco-rank modules

Summary

- All projects are on target to developing and demonstrating over 2% fleet fuel consumption reduction
- All projects are on time and on budget
- FY 2014 budget request includes funding for a new solicitation in the Legacy Fleet Improvements area